HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

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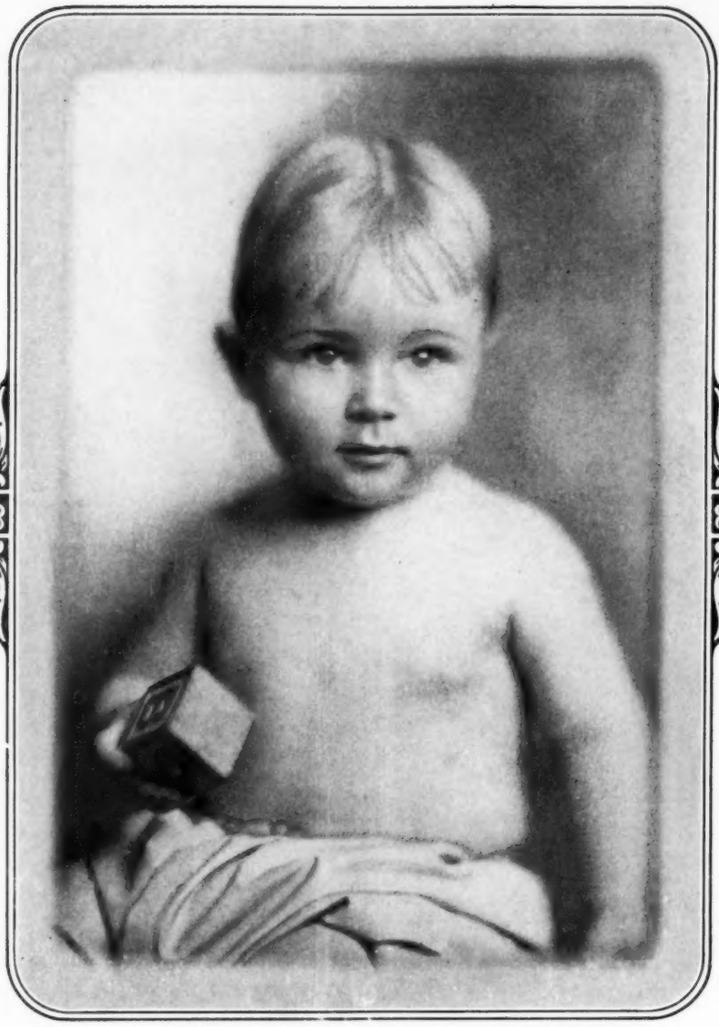

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A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association
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VOLUME 3 — OCTOBER, 1925 — NUMBER 10

CONTRIBUTORS OF THE MONTH

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HELEN KING, author of the article on corrective exercises for the preschool child, is a physiotherapist, connected with the Merrill-Palmer School of Detroit, Mich. DR. JAMES LINCOLN MCCARTNEY, who tells about smallpox in this issue, writes the following from Hankow, China, the "Chicago of China," where he is the only American private physician: "I am conducting a health column in the American language papers out here in China."

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The author of the second of the series of articles on the prevention of crime is DR. HENRY H. GODDARD, who is connected with the department of psychology, Ohio State University. Dr. Goddard's long study of the subject makes this discussion of the relation of mental defects to crime an authentic one. DR. FREDERICK M. BRYANT, an eastern physician, continues in this issue the series of articles on the medicine of the sun.

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THE NOVEMBER ISSUE

WHAT IS ASTIGMATISM? *By Edward Jackson. About the first thing a person learns about his eyes is that he has some form of astigmatism. It sounds worse than it is. Dr. Jackson, a frequent contributor to* HYGEIA, *will tell the readers of the magazine all about astigmatism—what causes it, and what is needed to correct it.*

EXERCISES FOR THE BUSINESS WOMAN. *By Lydia Clark. Several months ago* HYGEIA *published an article on exercises for the business man. The article was so successful that requests poured into the office for an article on exercises for the business woman. Miss Clark is connected with the physical education department, University of Ohio.*

Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

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Poster by Lawrence J. Gayda, South High School, Pittsburgh, awarded fifth prize in HYGEIA *health poster contest.*

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2+2=4X3=12-5=7+1=8÷2=4X9=36-1=35÷7=?
Little Boy Blue, come blow your horn,
To wake all the children for school each morn
Who've formed such bad habits, late hours they keep
And school time finds them in bed fast asleep.
The early bird gets the worm. Time and tide wait for no man.
GEOGRAPHY
DICTIONARY
A diller, a dollar,
A ten o'clock scholar,
What made you so late today?
I went last night to the movie show
And this morning in bed wished to stay.
—Velma West Sykes.
JOHN DUKES MCKEE
ABCDEFGHIJKLMNOPQRSTUVWXYZ&

Do you think we could all be robins?

Natural Gymnastics in the Public Schools

HELEN N. SMITH

WE ARE confronted today with two conflicting viewpoints in physical education. If we go to some schools we will find a program devoted to activities of play—games, sports, dances and natural gymnastics. We will find there a program that is definitely suited to the child's needs, instincts and capacities. We will find interest and cooperation and, above all, enjoyment.

At other schools we will find artificial exercises of the calisthenic type taught by the response-command method. The program is administered to secure certain excellences that are supposed to be good for the child, such as obedience, discipline, concentration, accuracy and posture. In the majority of cases the interest and enjoyment have been lost, and only effort remains.

Physical education should first of all be a natural and not an artificial process. It should have as a fundamental basis the modern theories of education. Education can not be acquired as such, it must come from within, through the workings of natural instincts and desires. We cannot secure physical education that will satisfy through a series of set exercises for the mere purpose of health and physical ability. It must afford the individual ample opportunity for accomplishing worthy things.

Physical education exists for the child, not the child for physical education. Therefore, it must be guided by the needs and instincts of the child, from the child's point of view. It must satisfy the play instinct, aim higher than health, than big muscles, than perspiration. It must set a standard of living; it must aim for courage, endurance and strength as health values, and for imagination, enjoyment and citizenship as mental values. Formal gymnastics must be renounced, and must be replaced by purposeful, living, joyous forms of play and exercise.

Let us go back to the two schools, one with a program of plays, games and dances, the other with formal exercises of the calisthenic type. In the first school, they are developing harmoniously all the powers of the individuals, because through these natural activities they are satisfying certain natural instincts and thus are gaining interest. For interest in physical education, there must be an identity between the activity and the participant, a relationship that is the sole guarantee of unified response. A child may be put through a certain set of exercises, but we may claim no assurance that cooperation is present. There may be perfect outward performance and at the same time inward rebellion.

Through games and plays children are creating a need for wholesome activity and exercise to be continued in after life, and such desirable values as initiative, good sportsmanship, loyalty and cooperation are instilled. Physical education in this form is objective, and it is developing all the powers of the individual, both mental and physical. It is preparation for living, for we are following the natural instincts of children, developing an interest to learn, teaching initiative and a quick response to a given situation in life, and giving enjoyment.

The second school with its formal program is not harmoniously developing all the powers of the individual. There is lacking, to a great extent, the incentive of interest and cooperation. In exercises of the calisthenic type there is no identity between the activity and the participant.

Tree climbing will satisfy the need of children for great activity.

Once learned, exercise of this type becomes a mechanical response to a given command. It is satisfying in no way the instincts of the child, and while it is slightly developing him in a physical way, the mental side is forgotten.

Material for Young Children

What material can we use in a natural program? For younger children, there are rhythms, dramatic games and singing games for the purpose of developing the imagination, initiative and good posture, active games of running, skipping, climbing to satisfy the need of children for great activity, and quiet games.

Although this is the same material used by the formalist, the method of presentation is different. The formalist is a director and nothing else. The initiative comes from him, the imagination. I have seen more than one teacher spoil a rhythm by saying:

"Now boys and girls, we're all going to be birds, and when birds fly, their arms move up and down, as mine do."

That is the director; there is nothing coming from the child. On the other hand, I have heard the naturalist, who is a leader and not a director, say:

"Did anyone notice a robin on his way to school this morning?

"And what did the robin do?

"Do you think we could all be robins?"

Here is initiative on the part of the child, a stimulus to his powers of observation, imagination and imitation.

For Older Boys and Girls

As we go on to the upper grades, we have games of greater coordination, requiring cooperation and team play. Folk-dancing is excellent for the girls and, if taught in the right way, it stimulates them to learn the manners, customs and history of various countries.

Clogging for boys presents excellent coordinations and plenty of enjoyment; then there are athletics, carefully supervised in view of the physiological condition of the individuals, and natural gymnastics.

Natural gymnastics are exercises created to satisfy a need for greater skill and proficiency in a given situation. In the fall of the year, let us say, the boys are to play soccer in the afternoons. In the regular gymnasium periods in the mornings, we would start with certain elementary games leading up to soccer, such as relay races involving dribbling, block-ball, etc. Soon they find that it is not as easy to use their feet as they had thought, and they want to know how to do it. We have created a need, and now is the time to use the natural exercises involving the technic of soccer. These exercises are done by the class as a whole, to count, but the class is interested, there is an identity between the activity and the participant, and what they have learned will be carried over into the game when they play it. Through the various activities of the school, such as baseball, basketball and swimming, this idea can be carried out.

In the University of Cincinnati and in the demonstration school connected with it, for the last three years we have been successfully operating an entire program of natural activities. In the demonstration school all the work is taught by the students who are majoring in physical education. The method has been gradually to divide the classes into groups, each group with a leader, and the work is carried on eventually by the children with the suggestions of the teacher.

The room teachers have told us many times that the method is a superior one; they tell how much the children's initiative has increased, how their leadership abilities have developed.

In the university itself we have to deal with girls who enter as freshmen, the majority of whom have a hatred for gymnasium work. Until two years ago they were thrust into any class because they happened to have a free hour at that time. Then we offered a choice of activities, athletics, natural gymnastics, folk-dancing, clogging and natural dancing and, to see what would happen, a class in formal gymnastics.

The results were amazing. Out of 400 girls, the largest group chose athletics and natural gymnastics; the next largest group took natural dancing, the third largest was folk-dancing, and clogging. Only three girls signed up for the formal class. To us it was merely additional proof of the failure of formal work.

We have, however, found one use for calisthenic exercises. That was in a group of mentally deficient children. This group was unable to follow a program of natural work, but it could and did follow automatically formal calisthenics. Consider, therefore, the program which is being given in the schools—is it one for normal, eager children, or is it for those who are mentally inferior?

Care of the School Child's Health

II. A Cooperative Enterprise

THOMAS D. WOOD AND MARION O. LERRIGO

THE first day of school has come. From now on parents are sharing the care of their child's health with the school; that is, the teacher, the principal, the supervisor, the janitor, the superintendent, the school psychologist, the statistician, the school board, and the school doctor and school nurse.

What should fathers and mothers legitimately expect the school to do for their children's health? And equally important, what should the school expect from parents?

Experts have estimated that in a school system of 6,000 pupils, $2.78 is the minimum annual cost for each pupil for providing an adequate staff for health service. This amount should provide for a staff that includes (1) a director of school health work, (2) a part-time physician, (3) a supervisor of health teaching, (4) a mental hygienist, (5) three school nurses, (6) a part-time dentist, and (7) an oral hygienist. This staff does not include special departmental teachers or teachers of physical education, since their salaries are charged not to the health service budget but to the teachers' salary budget It would be difficult to point out any other circumstances in which $2.78 would procure for the child the services of so many health experts!

Citizens of a community have a direct responsibility in supporting or creating public sentiment that will embolden boards of education to appropriate the necessary amount of money for school health service.

This is not an imaginary problem. A questionnaire compiled in 1922 showed that of 282 cities supplying information, only 46 cities spent $2.75 or more per pupil annually on health supervision and physical education combined. The median expenditure was $1.37. Fifteen cities spent less than twenty-four cents. Six cities spent more than $5.00.

The schools legitimately expect adequate fianancial support for health service. The citizens legitimately expect that their money will be spent so as to bring the largest possible returns in terms of health to their children.

Annual Health Examinations Are Essential

Parents should expect their children to receive a thorough health examination on entering school and at the beginning of each subsequent school year. Of 323 cities responding to the question, "How frequently is a pupil in your schools given a health or physical examination to discover defects that may be present?" 61 per cent. of the cities reported examinations given once a year, and 17.3 per cent. reported examinations twice a year. Four per cent. had no health or physical examinations.

Parents should expect the health examination to be thorough. In order that adequate information may be supplied regarding all the items listed, it is essential that the school physician be competent and well-trained. He should also be interested in school health work, should appreciate its significance, and should understand and get along with children.

Unfortunately the examinations are often superficial because of inadequate facilities. There are at least twenty items that should be included in a health examination. Reports from 245 cities showed that only six of the items were

included by more than half of the cities. In these cities, attention was paid to the six items as follows: examination of eyes, 89.3 per cent.; ears, 82.9 per cent.; teeth, 74.3 per cent.; throat, 64.5 per cent.; nose, 62.5 per cent.; and skin, 56.3 per cent.

The following are the items that should be included in a health examination:

Age	Lungs
Height	Spine (posture, shoulder position, curvature)
Weight	Abdominal walls (for rupture)
*Chest measurements	Feet (condition of arches)
Eyes	Nervous and mental development (advanced, retarded)
Vision	*Stage of development of adolescence
Hearing	Special tests and measurements as needed.
Nose (concerning mouth-breathing and catarrhal nasal discharge)	
Teeth	
Glands of the neck	
Skin	
Bones (rickets)	
Heart	

* To be used in selected cases.

You Are Cordially Invited

The school physician should expect one or both of the parents to be present when their child is examined. Notices should be sent to the parents several days before the examination is to take place—this is one of the things that fathers and mothers should expect; and they should be present for the examination—a thing the school should expect.

Parents can reach a better understanding of their child's condition by witnessing the examination and are better able to carry out intelligently the recommendations made by the examiner.

After the school physician has examined the child, he reports to the parents regarding the condition of the child's health and makes recommendations for corrective work that needs to be done. It may be that the child needs the attention of the family physician or of some specialist. It may be that he needs to follow a different scheme of living in regard to diet, sleep, play, or some of the other health essentials.

At this point the responsibility swings again from the school to the home. It is a well known fact that much of the excellent work of the school health service is ineffective simply because parents are indifferent or careless and do not carry out the recommendations that school physicians have made. Consequently a great deal of effort is spent on follow-up work; that is, the nurse, teacher, or physician must spend time and energy in following up the notices sent to the homes and in trying to make sure that the children actually do receive the needed attention.

It is essentially the parents' responsibility to see that their child receives proper medical attention. If a parent is notified that his child has certain defects that need correction, he should see that corrective measures are undertaken at once. The purpose of the school health examination is to reveal the needs of the child. School physicians are not supposed to give treatment. Therefore, when the parents shirk their share, the efforts of the school health service are partly wasted.

Complaints are often made that the health examination is superficial, hasty or offensive to the child. An examination at which parents are invited to be present is likely to be thoroughly and carefully made. Grounds for complaint are most frequently given in schools in which the children are not examined individually and privately but in wholesale lots.

Parents who have reason to believe that the health examinations are superficial, hasty, or conducted in a way to offend the sensibilities of their children should endeavor to discover what are the actual conditions attending the examination. If they are unsatisfactory, parents should demand a change for the better, realizing of course that such a change may mean a necessarily higher financial expenditure and that it partly depends on them to make this possible.

"Spare the Rod and Spoil the Child"

After a protracted absence, the rod is becoming fashionable again in education. However,

Phibbs

The school physician should expect one of the parents to be present when the child is examined.

the new fashioned rod is not of birch or hickory; it is a measuring rod. The measuring rod and the scales are perhaps the most important pieces of equipment that the school nurse or doctor uses. Routine health examinations are given once a year. But a great deal can happen in a year, especially a year in the growing period of a child's life. Children normally change more in one year than an adult does in many.

Many cities now use the plan of weighing the child each month and of measuring his height every three months, comparing his growth with standards for healthy children. In the majority of cases this method affords an excellent check through the year on the general condition of the child's health. It is quite generally accepted that there is something wrong with the child who is persistently more than 5 or 7 per cent. below the standard weight for his age and height. The fault may be that he is not eating enough or not eating the right kind of food. Very often the cause lies in diseased tonsils, adenoids or neglected and defective teeth.

Overweight is not a defect in the growing child unless it is extreme. The child who is 20 per cent. or more overweight should be examined carefully by the physician.

Weight is only one of the indications of the state of the child's health. There are some children whose weight is standard but who are malnourished and show other symptoms of defective condition. A pale complexion, lusterless eyes, drooping posture, unusual fatigue, persistent headaches, flabby muscles—these and others are danger signals that should not be disregarded. Nevertheless, the most generally useful and most concrete index of health is the child's weight.

Here again the responsibility is mutual. It may be that the program of weighing and measuring has not been begun in the schools, for lack of funds to buy scales. In some cities, women's clubs or other organizations have realized the importance of this work and have financed its beginning.

After the program is established, there remains for every father and mother the duty of giving careful attention to the weight reports sent to them by the school and of correcting any cause of malnutrition.

The yearly health examination, the monthly weighing and quarterly measuring serve to reveal the general condition of the child's health and to show the existence of some physical defects. They form the basis for a constructive, preventive program of health conservation.

The measuring rod and scales are important equipment.

It is also necessary to protect school children from communicable diseases. The annual or monthly examination can not do this. Guarding against communicable disease is an every day job and is one for which the teacher must be largely responsible. Daily inspection by the teacher has for its object the discovery of suspicious signs of illness.

Outwitting the Germs

Many of the common children's diseases in the early stages show similar symptoms. Before the specific disease can be diagnosed, these suspicious signs appear. This early period, when the existence of the disease is often unsuspected, is unfortunately one of the most dangerous times so far as spreading the infection is concerned. However, if all children are excluded from school at first appearance of the suspicious signs, the spread of the infectious diseases is greatly reduced.

There are eight or ten suspicious signs for which teachers should look. Fever, running nose or eyes, redness of eyes, rash, sores on the skin and headaches are the most significant. The teacher should send any child who shows any of these signs to the office of the principal, the school nurse or physician, or if none of these is at hand, the teacher should be authorized to send the child home. The child should not be permitted to return to school until a physician has examined him and until sufficient time has elapsed to prove that he is not coming down with a communicable disease.

The teacher is not called on to diagnose the disease and should not attempt to do so. Her only responsibility is to send the child with suspicious signs to his home.

Here, again, the cooperation of the home is essential. Parents, as well as teachers, should be able to detect these suspicious signs, and when they observe them in their children, they should keep the children home from school and under observation until it is clear whether the illness is infectious.

After the child has had a communicable disease, it is essential to keep him home until danger of contagion has passed. Most schools require a board of health's or a physician's certificate before readmitting the child to school.

Thus it becomes evident that in the health examination, in weighing and measuring, and in preventing the spread of communicable diseases, the school health service and the parents must work hand in hand.

Corrective Exercises for the Preschool Child

HELEN KING

SCHOOL children between the ages of 6 and 16 are frequently found with poor posture, round shoulders, curved spines and flat feet. All of these conditions probably might have been prevented earlier in life. How soon do these deformities occur?

We know that babies are often carried in the wrong position or sleep in too short cribs, thus starting a curvature of the spine. We know that between the ages of 2 and 5 they sit or stand in the wrong positions. We know they wear little under-waists with long garters attached, and that when these garters are fastened to the stockings, they pull on the straps near the tips of the shoulders and help to make round shoulders.

The average child gets no systematic daily setting-up exercises. Children need to be kept fit by exercises just as much as adults.

With these problems in mind a preventive plan was introduced at Merrill-Palmer School, Detroit, with children of preschool age. A physical examination was given each child and a nude photograph taken in the standing position. The common defects found were, poor posture, knock-knees, flat feet, round shoulders, slight functional spinal curvature and constipation. Half of the children in the school were found to have flat feet associated with other evidences of rickets that had in most cases healed. Various authorities estimate that from 50 to 90 per cent. of flat feet in children result from rickets. We believe that the higher figure is correct for children of preschool age.

The diet and regimen of the mother before the child's birth plays a rôle in the development of rickets. Manifestations may appear at any time from birth to 3 years of age but seldom later. The disease appears much more frequently in the first half year of life than was formerly recognized. A test of the child's blood shows a deficient percentage of inorganic phosphate and calcium. During these years nutrition and hygiene are the important therapeutic measures.

Child Follows Scientific Daily Program

The outstanding defects of posture frequently associated with other evidences of rickets are the markedly protuberant abdomen, the hollow back, curvature of the spine, flat feet, knock-knees and bow-legs. In the correction of defects due to rickets, the diet and daily regimen of the child are of fundamental importance. The children in the Merrill-Palmer School all have as a background of treatment a scientific daily program.

The children are brought to the school at nine o'clock. A nurse from the department of health inspects each child before he enters the schoolroom. She isolates or refers to the school physician any child with an infection or a doubtful condition.

The children then assemble for an hour under an instructor, who directs them in story telling, news and a brief setting-up drill, after which the daily cod liver oil and orange juice are served. A short intermission follows and the children go up to the large nursery room, where they are instructed in toy making, modeling, drawing and building, and dramatics.

During the hours between 9:45 and 12 o'clock corrective work is being given in a small room nearby by the physiotherapist, and each child is instructed in his physical exercises, with a student in attendance to observe and assist. After the period in the nursery room the children put on their wraps and go out of doors to climb ladders, play in jungle jym, go down slides, build in sand boxes, ride seesaws or velocipedes, pull wagons, sweep or shovel. These activities give them exercise and sunshine and teach them balance and coordination of muscle groups.

On returning from outdoors they wash their hands and faces and enter the schoolroom for

TRY THESE EXERCISES

FOR CORRECTING DEFECTS IN THE PRESCHOOL CHILD

For Flat Feet

1. Picking up marbles with the toes.
2. With marbles gripped, toeing in and walking on outer borders of feet.
3. Walking a chalk line with arch raising.
4. Throwing a ball cupped in soles of feet.

(One eighth elevation of inner border of shoes, or Thomas heels are recommended.)

For Poor Posture

1. Prone lying, trunk raising.
2. Bicycling.
3. Swimming.
4. Turning somersaults, with slow sinking of legs.
5. Turk position, or cross E position with deep breathing.
6. Sitting, trunk twisting.
7. Sitting with hands at neck, trunk bending forward.

For Constipation

1. Abdominal kneading.
2. Abdominal retraction.
3. Standing, bending forward to the floor with straight knees.
4. Knee circling.
5. Windmill.

For Knock-Knees

Flat feet are usually present with this condition. Outward molding of knees with adduction exercises and foot exercises.

instruction in rhythm, response to music and singing. Following this lesson they lie down for a period of relaxation. Some of the children then set the table for dinner and when all is ready the others come down and take their places. All of the serving at meals and changing plates are done by the children themselves.

After dinner comes a nap of about two hours and on waking the children have a mid-afternoon lunch usually consisting of a small glass of milk. They then put on their wraps and go out of doors to play until they are called for.

Special Diet for Preschool Children

The daily program, as has been mentioned before, includes taking of orange juice and cod liver oil; these furnish an abundance of antiscorbutic and antirachitic and growth vitamins. Once a week a dose of iodid is added to the diet as the school is in a goitrous region.

The children's diet is planned by students under the direction of a nutrition specialist. It is based on the needs of children of preschool age, and special emphasis is placed on the use of the best type of protein for the growing child, the mineral salt, the vitamin and the bulk content of the diet. A daily record of the food intake of each child is kept by the students, and a record of the kind and amount of food eaten by the child while at home is kept by the mother for periods of two weeks at a time on forms sent out by the school. By this method the child's total daily intake of food is determined and a knowledge of the type of food served the child at home is acquired.

Mother Supervises the Exercises

In the correction of specific defects that have already appeared, corrective exercises are necessary in addition to the improved diet and daily regimen. The school physician, on the basis of a complete physical examination, selects the children who are in need of special corrective exercises and refers them to the physiotherapist.

In giving these exercises the mother's cooperation and interest are obtained, the child's defect is explained to her, and the importance of early treatment in preventing established deformity in later life is emphasized. She is then shown the special exercises to be given her child and taught to do them at home. Twice a week the corrective instructor puts the child through the exercises at the school, changes some if necessary, and teaches him to feel that it is a part of the daily regimen to make him a strong, straight child.

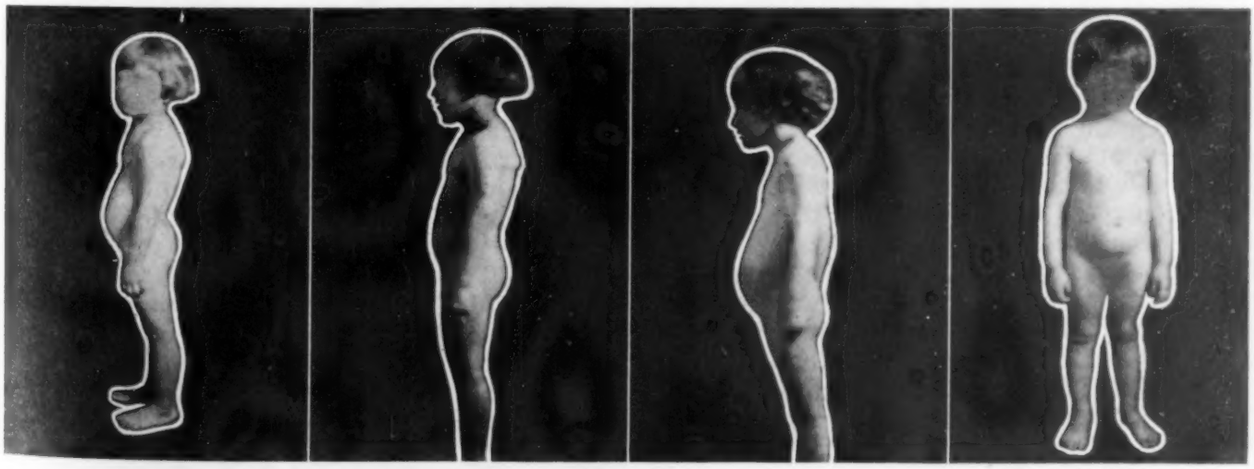
An individual chart is filled out with diagnosis and exercises and is sent each week to the mother, who checks up the child's daily exercises and reports on the chart each day whether the child's performance is good, fair or poor.

Bowel report cards for each day are sent in to the school and checked with the exercise card. In every instance constipation is eliminated by scientific diet and exercises. Height, weight and other bodily measurements are made each month and at the end of each school year a complete physical examination is repeated, and a photograph is taken by means of which changes and development can be shown.

The results of this experiment have already proved its worth. The preschool age is the habit forming period, so bad habits of standing and sitting are checked and good habits are formed.

The following results are obtained by the school regimen, diet, corrective exercises and cooperation of the home:

1. Improvement in dietary habits of the children.
2. Correction of constipation in all of the children.
3. Marked improvement in the general physical condition of the children.
4. Growth and height above the published averages and corresponding increase in weight.
5. Formation of proper postural habits.



Preschool children of the Merrill-Palmer School. Three of these photographs show distinct types of poor posture; the fourth shows knock knees and pronated feet. All of these children showed remarkable improvement under corrective exercises and improved dietary habits.

China's "Heavenly Flowers"

JAMES LINCOLN McCARTNEY

SMALLPOX, popularly known in China as "heavenly flowers," was a great scourge before the introduction of vaccination and, because vaccination is not so widely enforced in China as it is in America, the disease still is exceedingly prevalent.

The origin of smallpox is shrouded in the obscurity of antiquity. It is claimed by some writers that this disease dates back to the Tsche-u dynasty in China, a period of about 1200 years before the Christian era. The earliest record of its occurrence is found in India, where the Brahmins practiced inoculation before this time. It is stated that in past centuries temples were erected in China in honor of the disease, and the goddess of smallpox was glorified.

Inoculation, or the "sowing of smallpox," was practiced in China at a very early period, the result being crudely attained by thrusting crusts from smallpox patients into the nostrils. From China, smallpox apparently spread to the rest of the world, and until vaccination was introduced it caused one-twelfth of all deaths. Every one felt that he had to pass through an attack of smallpox at some period of his life, and this belief still prevails to some extent in China today.

Although Western medical science is available in many parts of China, the natives, in the main, still adhere to the superstitions of bygone ages. Even though the Chinese take it for granted that smallpox is ever present, they are much afraid of it.

Still Employ Charms Against Smallpox

A little girl was seen on the street with a strange collection of articles hanging down her back. These consisted of a little mirror, a rooster embroidered on cloth and stuffed like a pin-cushion, and a string of half a dozen millet seeds. It was found that another child in the same house had smallpox, and the object of these charms was to avert the dread disease. The demon of smallpox, it was hoped, in seeking a fresh victim would haply be attracted by his image in the mirror and would stick the spots on the face he saw there. Thus he would be decorating his own countenance and the child would escape.

Let us consider the diagnosis and treatment of "heavenly flowers," the disease that causes such fear to all, be they yellow or white. The incubation period in the majority of cases of smallpox is from ten to twelve days, and may extend to twenty-one days, although in some cases it may be only five.

The little girl at the Chinese doorway wears the charms against smallpox mentioned in the article.

The view is generally held that the infection is air borne and enters the system through the nose and throat. The disease is contagious before the eruption appears. The most common means of infection is by direct contact or transfer of infective material, as saliva or urine, from the patient to another person. Flies and other insects may mechanically transfer the infection, but smallpox is not considered an insect-borne disease. Smallpox attacks all races and all classes and is present at all times of the year, although most common during the cold months.

The diagnosis of smallpox may be assured if the patient has been previously exposed to the disease or an epidemic in his locality is known. If he has not been vaccinated within the last three or four years, with a "take," the diagnosis is more likely. The disease has a sudden onset with a chill, followed by a rapid rise in temperature. This continues for a period of about three days, when a very fine rash appears, usually first on the face and hands. This rash becomes distinct, the small elevations fill with pus and appear over the whole body. Prior to the development of the eruption, there is pain in the back and loins, cough and sore throat, and frequently vomiting. The eruption is character-

istic and is nearly always followed by scarring; according to the Chinese belief, the scarring is due to poisonous air.

The severity and results of an attack of smallpox are influenced greatly by whether the patient was vaccinated, the severity of the prevailing form of smallpox, the age of the patient, and the extent and depth of the skin eruption. The eruption is fully formed in nine days, and the crusts begin to dry up and fall off in two weeks. The patient should be isolated until all the scabs are removed and until he has had one or more antiseptic baths.

A shrine to the guardians of the family. The compartment on the left contains the Goddess of Heavenly Flowers.

Little Can Be Done to Cure Scars

The treatment of smallpox should be left in the hands of a physician and all care taken to prevent the spread of the disease. Various methods have been employed to prevent pitting but none have stood the test of experience. In children the eruption is more superficially located, as a rule. In a patient once vaccinated, the chances of recovery without pitting are good. The "red light treatment" to prevent pitting merits no support. Once the pits have formed, nothing will remedy the condition of the skin. If the patient is a child, his skin will often improve as he grows up.

Some of the old Chinese "authorities" recommended rubbing the body with pure honey, and others used garlic and fresh goat's blood. A host of preparations were recommended, and puncturing with needles, burning, dieting, baths, charms, incantations, and various superstitious practices were advised in addition to drugs.

Disinfection after a smallpox patient recovers is highly important. The infection of smallpox is not only imparted to the atmosphere surrounding the patient but to all articles that have been near him.

Smallpox is still as serious as it was in former times. Thousands die of it yearly throughout the world, and this is the more terrible when it is realized that these lives might have been saved by the use of a simple preventive measure, vaccination, which is within the reach of all.

Vaccination against smallpox is based upon the fact that cowpox represents an attenuated form of the disease. Vaccination as practiced by the natives in China was first carried out in the Sung Dynasty, 1022 A. D. The prime minister, Wang Tan, after having had several of his sons suffer severely from smallpox, was informed of the successful preventive inoculation practiced by a Chinese in Szechwan province, living at Ngo Wei mountain. Wang Tan had a son inoculated and the inoculation proved very successful. This method was rapidly taken up and became very popular with the people.

Four forms of inoculation are described in Chinese literature. The first consists of plugging the nose with powdered smallpox scabs laid on cotton wool, the plug of cotton being allowed to remain in the nose about six hours. The second method described is to put the powdered scabs into the end of a silver tube and through it to blow scab dust into the nose. To remove the undergarments of a smallpox patient and put them on a healthy child for two or three days constitutes the third method. The fourth method is to smear a piece of cotton with the contents of a smallpox blister and to stuff it into the nose. Chinese doctors said this was cruel and condemned the practice, claiming that it would affect the patient from whom the matter was taken.

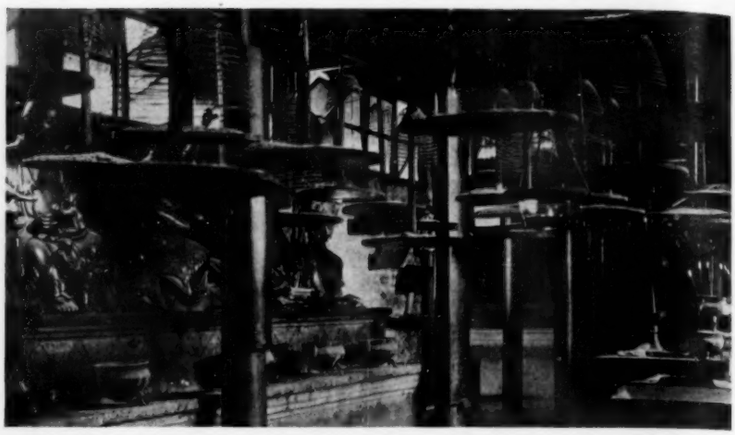
Modern Control of Smallpox

The modern method of vaccination with cowpox was discovered by Edward Jenner, son of an English clergyman. Jenner's original experiments were based upon the popular belief prevalent in England that dairy attendants who had had cowpox did not contract smallpox. His classical experiments were made in 1796. After Jenner published his work, the method was rapidly taken up by physicians all over the world, with a result that smallpox has been reduced from a frequent and dangerous plague to a disease that in civilized countries is under practically complete control.

It is remarkable that a century before Jenner's epoch-making discovery the Chinese seemed to have had an idea of proper vaccination, for in an ancient Chinese medical book the use of cow fleas for the prevention of smallpox is mentioned. According to this book, there are two kinds of cow fleas, black and white. In medicine only the white ones are used, these being ground into powder and made into pills with rice flour. It is not at all impossible that the

fleas from a cow suffering from cowpox, when taken by the mouth, might have the same effect as cowpox vaccination. Had there been a Chinese Jenner to follow up this valuable clue the discovery of vaccination might have been made a century earlier and millions of lives saved.

The present generation has absolutely no idea of the seriousness of smallpox as an epidemic disease for the simple reason that vaccination has been a general procedure almost since the beginning of the nineteenth century. It is astonishing that, at the present time, there are still centers of opposition to vaccination in many civilized countries.



The main shrine in this temple erected to the gods of medicine is to the Goddess of Smallpox, or the sower of Heavenly Flowers. The spirals are perpetually burning incense.

How Vaccine Is Prepared

In producing smallpox vaccine for human inoculation on a large scale, young calves from two to four months old are generally used, although horses and donkeys are also employed, and in a few of the tropical countries young water buffalos serve the purpose. The animals are carefully treated and rigid cleanliness in all manipulations is attended to.

The method used in vaccinating human beings is extremely important. A number of different procedures have been used and described, but in each case the important thing is proper inoculation without outside infection. Scratching the skin through a drop of the vaccine on the arm or leg is now perhaps the most common method. The most successful, although the most tedious, method is the injection of the vaccine into the skin, the intradermal method.

When a person is vaccinated, after an incubation period of from three to four days the local eruption at the site of inoculation begins. A small blister soon develops, surrounded by a reddened, inflamed, and tender ring. The region around the eruption may be slightly swollen and the person may have a slight fever lasting several days and feel slightly ill. If the vaccination is by scratch method the blister dries, leaving a crust or scab. When this comes away, a typical pitted scar is disclosed. The vaccination usually itches intensely, and is generally healed within two weeks.

It is irrational to attempt to fix a definite time for the duration of the immunity against smallpox as produced by vaccination. It is known through experiments and experience that the immunity gradually wears off. On the average, definite protection after a good take lasts about seven years. The degree of protection is usually absolute for some years, and then gradually fades. Smallpox itself does not always protect against smallpox, for cases have been reported of persons having two and even three attacks.

It is a fallacy to state that if a vaccination fails to take, a person is immune. Vaccination may not properly take for several reasons; the operation may not have been rightly done, or the vaccine may not have been active. Sometimes a person is unsuccessfully vaccinated two, three, four or more times before a typical take is obtained.

In a country where smallpox is a common occurrence it is advisable to be vaccinated each year or at least every two years, while in America every five years is sufficient. All persons exposed directly or indirectly to smallpox should at once be vaccinated unless they have had the disease or have been successfully vaccinated recently.

Selfish to Remain Unvaccinated

The alleged danger from vaccination has been greatly magnified by the antivaccinationists. The greatest and practically the only danger from vaccination is from outside infection of the wound. Many of the infections after vaccination occur in those in whom the regard for cleanliness is slight and who neglect the care of the wound. A vaccination wound should be treated as any surgical operation or cut would be, to prevent infection.

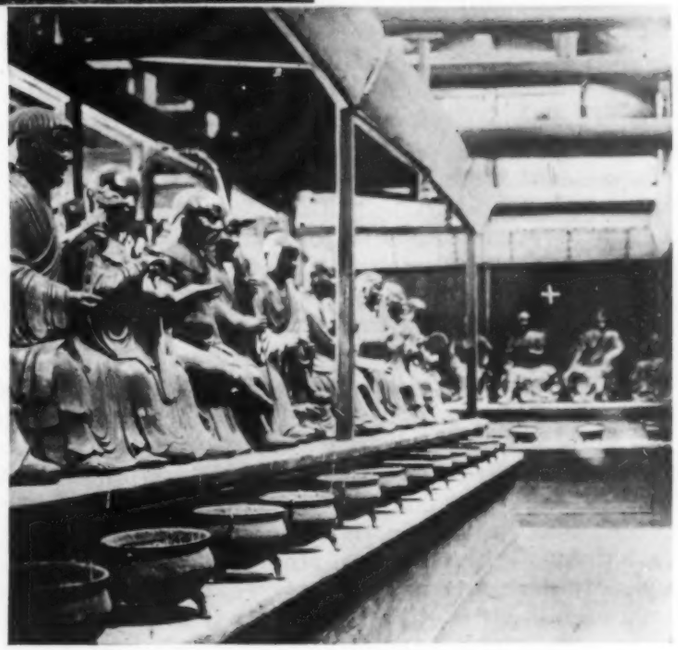
In any case, the danger connected with vaccination is infinitesimal when compared with the benefit conferred. A single example will suffice. The United States authorities have vaccinated 3,515,000 persons during the past few years in the Philippines without a single death or any serious complications after the vaccination. A very sore arm was a rare occurrence.

Vaccination affords a high degree of immunity to the individual and a well nigh perfect protection to the community.

At least seventy-five per cent. of the population of China live in shanties like these. It is small wonder that smallpox takes a heavy toll.

Chinese coffins containing corpses are allowed to remain above ground until a lucky day comes to bury them. Death may have been due to smallpox, yet these rude boxes are often allowed to remain until they fall open because of the weather. They are undoubtedly a source of infection.

A temple erected to sages of the past. The cross marks the image of Wang Tan, who introduced inoculation against smallpox in China in 1022 A.D. This was 774 years before Jenner introduced vaccination in Europe.



Mental Health in Middle Life

MARY O'MALLEY

Courtesy Chicago Health Department

A mother should stress the importance of a cheerful, calm mental attitude toward life. This preparatory education will tide the daughter over the stress of middle life.

DESPONDENT views concerning the prospects of women who are about to stop menstruating have prevailed so long that they have become traditional, and forebodings concerning the changes in the body at this period have produced distress, anxiety and imaginary symptoms. Much of this suffering could be avoided by proper instructions as to what may be expected and by proper care, if untoward symptoms really make their appearance.

That many of the nervous and mental symptoms (due in the most part to the ignorant belief that some mental or physical disturbance is bound to appear at this period) could be avoided by such preparation is well known by the physician who has to deal with these cases after apprehension and anxiety have done their worst.

The menopause is a phase in the life of the individual during which the body chemistry begins to undergo certain changes. It is the period during which the sex glands begin to lose their function and the bodily processes decline, with consequent lowering of both physical and mental resistance.

Men Less Apprehensive Over Changes

These changes appear earlier in women than in men and with more marked effect, possibly because women mature earlier than men, and possibly because men approach this stage in their lives with less apprehension than women. Men are not anticipating this change as a disease. It has not been impressed on them that as they enter middle life they are destined to suffer physical and mental disaster.

Osler stated that at about 40 years of age men reach their maximum capacity. If by this time some philosophy of life has not been attained the down-hill road is bound to be a rough one. With some hopeful world-outlook, however, men manifest no more distressful symptoms in the involutional period than in the evolutional period.

If a man has led a moderate life, has not wasted his forces in dissipation and does not have a faulty philosophy, he passes through this stage of human life without unusual disorders, psychic or physical. The period of involution, beginning between the ages of 40 and 55 is usually a slow, uneventful process extending over several years. While occasionally these changes may be passed through rapidly, yet the whole period of devolution is about ten years, and should terminate in a peaceful Indian summer of life.

Largely a Mental State

Now why should women be more apprehensive than men on approaching this time of life? A few women face this stage in a matter of fact way, as a part of their natural existence, but the great majority look forward gloomily to unusual disturbances and many of them have mental depressions merely as a result of worry. They expect great changes at this age; physicians themselves too often contribute to their anxiety and instead of quieting them by wise influence and instruction add to their alarm and increase the tendency to nervous and mental symptoms.

The physical changes—one cannot call them symptoms, for symptoms indicate disease—are cessation of the menses, or the monthly periods, and changes in the expansion and contraction of the walls of the blood vessels. This cessation of the menses may come on abruptly but is usually a gradual process, consisting, normally, in a progressive decrease in the amount of flow or in the lengthening of the intermenstrual period. Sometimes, however, there is a greater profuseness and shorter intermenstrual periods, phenomena which are not physiologic or normal and for which professional advice should be immediately sought. These changes may be prominent, but their untoward consequences

have also been much exaggerated. They now are regarded by authorities to be due to regressive alterations in the sex glands and lessened activity in the functioning of the ovary.

The reduction of the secretions of these glands, together with atrophic changes in the other organs of internal secretions, is probably responsible for such manifestations as hot flushes of the head and neck, hot flashes over the entire body, local sweats, sweating of the entire body, and other sensations such as fulness in the head, headache and insomnia. These manifestations are only transitory. They may extend over a period of several years and then disappear as suddenly as they came, but usually they are of short duration. Devolutional changes in all of the tissues of the body, skin and hair may be expected at this time.

Must Gain New Attitude Toward Life

The tendency to emotional depression during this period is the most noticeable psychic feature, and probably is a universal manifestation accompanying the menopause. The reason for this is clear. It is difficult to accept the approach of old age without twinges of regret and at this critical period a depression of a more or less pronounced nature may be experienced even by the most phlegmatic individuals if they dwell on the subject of their decreasing powers and years. If normal individuals succumb to depression when faced by the prospect of useless age and death, it follows that there is suffering for nervous and hysterical persons and those who have not worked out some philosophy for the future—some earthly or heavenly hope. If each individual could work out a mental solution of the difficulties that come with advancing age, he might still believe that there is a purpose in this period of his life, might even look upon old age as the best age and say with Browning,

> "The best is yet to be
> The last of life for which the first was made."

It is now quite generally accepted that functional nervous and mental diseases depend essentially on disturbances of the instinctive and emotional states, and in the light of this knowledge it is easy to determine the conditions on which much of the anxiety and depressions of this period depend.

Women go on from day to day with their energies centered on present satisfaction, and when they reach the time when their active functions are fulfilled, when their energies are no longer absorbed in the keen pursuit of physical satisfaction, youthful ambitions, family cares, and the acquisition of wealth and position, they find themselves without resources to construct a larger view of life. They need a new attitude, more remote and detached, as they enter on the inevitable decline, which will make life still have meaning and which will lend zest to their activities.

Is it strange, then, that neurotic symptoms appear in the predisposed? They have long lived from hand to mouth, so to speak; their husbands, their children, their homes have long made demands on their time and their powers to the full extent of endurance; then suddenly it seems as though all significance had been taken from their existence.

If the critical period passes without breakdown, however, at the age of 50 or thereabouts these women undergo a complete change of temperament. At this time they are relieved of the burden of bearing and rearing children and have become gradually reconciled to the changes of their age; they now acquire a mental and physical strength beyond that of their earlier years. The organism becomes accustomed to new lines of activity, a favorable adjustment is made, and life glides on with a calmness that was impossible in youth.

Women Who Never Have Married

Wise guidance may enable women of another type to approach the menopause courageously. These are the women who have never married, who have made but light contacts with life. For them the menopause means the decline of beauty and charm, and they are filled with anxiety and sink into depression at the prospect of the lonely and cheerless period on which they are entering. Good counsel is particularly effective in these cases, for the interests, less firmly fixed on the fulfilment of woman's organic function, may be turned into new channels without producing the mental chaos that is often the fate of the wife and mother.

Physicians should teach their patients to regard this change from a broad biologic standpoint as a period, in its wider meaning, in no way different from the other epochs through which human beings must pass in rounding out their lives. Women must be taught at this critical period to fathom the real difficulties and face their problems when they arise with courage; they must be educated to meet the difficulties of their emotional life with the proper measures to bring about a happy solution; they must be advised and instructed as to the best methods to be used, and they must be shown how to adapt themselves to the new physiologic and psychologic situations.

On women with unstable nervous systems these new adjustments fall most heavily. These women stand most in need of care and guidance. If they fail to adapt themselves, if they succumb to their apprehension, anxiety and fear, if they are unable to sublimate their emotional tensions, they may not escape the mental hospital. But even there, where the part the purely mental factors play in this disturbance is now so fully recognized, the plight of such women is not entirely hopeless and wise mental hygiene may be attended with good results.

Canal Zone Children Are "Healthy, Wealthy and Wise"

C. P. KNIGHT

NEARLY three thousand children, native born and imported, live in the Canal Zone, where they are being reared in an environment entirely different from that of their cousins in the North. To the misinformed, the tropics are synonymous with invalidism to both adults and children. A glance at our children will convince the most dubious that they are "healthy, wealthy and wise"; they are being made into strong and useful citizens.

Some time ago and some place I saw this statement: "Children cannot be kept physically fit in any community unless they are made that way." The Canal Zone government is vigorously pursuing a policy to make them that way.

Canal Zone children are given every advantage conducive to healthful living. Granted that tropical climate is enervating, this handicap is offset by the extraordinary facilities for keeping physically fit. There is a sort of governmental paternalism surrounding the Zone child. This begins with the unborn and continues until the child is graduated from high school. Where except in the Canal Zone will one find such ideal environment? With its prenatal supervision, infant and preschool clinics, school hygiene, universal hospital treatment, pure water supply, perfectly screened houses, sanitary schools, swimming pools and playgrounds, all under the supervision of Uncle Sam, the Zone offers a healthful place second to none.

In the battle of life heredity counts, but environment scores high. The average Zone child is derived from the same racial stocks as States children, yet the Zone child plays the health game many leaps ahead of his less fortunate fellows, in overcrowded cities and isolated regions of the country.

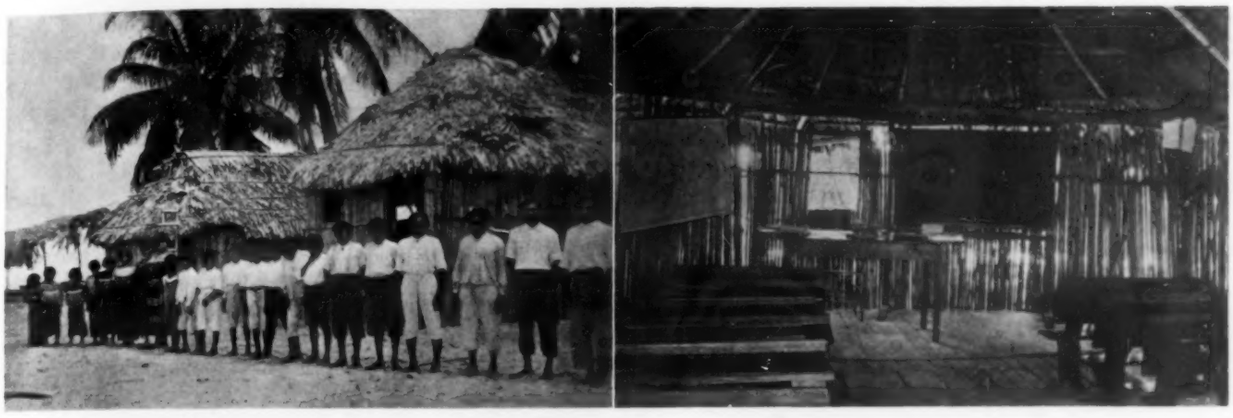
Three Departments Keep the Child Fit

The school child, from its entry into kindergarten to the day of graduation from high school, is under the close supervision of three departments of the Canal Zone. These comprise the division of schools, the health department, and the bureau of clubs and playgrounds; each of these departments has clearly defined functions, none of which overlap. The health department is principally concerned with the control of communicable disease and the physical examination of the child with its attendant follow-up work.

No branch of school hygiene is so important as that of physical examination. The interested official who does not take into consideration this important phase has performed only a small part of his duty. The experience of five years in three different states in school hygiene has convinced me that the usual physical examination of the school child is unsatisfactory.

The usual program in the average town is as follows: At the beginning of the school term the

In a setting of age old jungle palms and varicolored flowers stands a Zone public school. Not a scrap of paper can be found around its grounds.



A native school and school children. The civilization of the Canal Zone has not yet penetrated this part. On the right is the interior view of the school building.

physical examination is conducted by the local health officer, the school physician, or a volunteer. The child is examined in a perfunctory manner, defects recorded and the usual notices sent to parents. In a certain percentage of cases these notices are looked upon as so many handbills and are thrown away; the children continue to carry defects.

A notice reaches Mrs. Smith to the effect that her son Sam should consult a physician on account of a tonsil defect. She takes him to see the family physician. This doctor has long practiced in the town, is the counselor for the community and has the confidence of every one. He does not believe in "yanking out tonsils." Mrs. Smith returns home highly pleased, fifty dollars saved, and Sam continues to carry pus laden tonsils. Incidentally he develops a case of rheumatic fever, which, of course, is in no way related to the tonsillar infection, thinks the mother. Mrs. Smith regards the school examination as a farce anyway, so the school physician is discredited.

Little Ellen has cavities in her first teeth. She is thin, has no appetite, and is not doing well in her studies. Mother is advised to consult the dentist. The advice is ignored. "They are the first teeth and will drop out soon," says Ellen's mother. Ellen continues to suffer from toothache, has sleepless nights, and remains thin and undernourished. Some other little ones have eye-strain, cross-eye, or other serious eye defects. They are sent to the town optician or fall into the hands of some notorious "glass-fitter" who guarantees to cure anything by oft repeated changes of his stock glasses. In the aggregate, year by year, so few defects are corrected that the school physician carries on his work more or less as a painful duty.

In contrast to this picture, what is the system in the Canal Zone? The health department is concerned with the schools in two main activities: the control of communicable disease, and the physical examination of the child for detection of defects. With its close supervision the department allows contagious disease no quarter. Under the regulations, teachers are required promptly to report any suspicious illness among pupils. Upon report, physicians on duty at the various dispensaries immediately investigate the case and in certain contagious diseases the child is sent at once to the hospital for isolation. Hospitalization of children suffering with measles, chickenpox, diphtheria, scarlet fever, cerebrospinal fever, poliomyelitis, smallpox, and thyphus fever is mandatory. Those with minor communicable diseases are allowed treatment in the home under strict quarantine. If a child is absent on account of any sickness for more than forty-eight hours, he is compelled to report to the dispensary physician for examination and readmission to school.

School children of the Canal Zone have a distinct advantage in that the examination is conducted by government physicians highly trained in their respective specialties. This is an innovation over older methods. At the beginning of the school session a preliminary weighing and measuring is done by the school nurse. Later the child is referred to a specialist, who examines the eyes, ears, nose, throat, and teeth. This examination is done as thoroughly as is done in most specialists' private offices. Both vision card and ophthalmoscope in darkened room are used for the eye examination. Likewise reflected light and special instruments are used for the examination of the nose and throat. The child is next referred to a physician specially trained in diseases of the chest. Here the examination is done with the child stripped to the waist, for it is a well known fact that refined diagnoses cannot be made through clothing covering the chest wall. The same physician examines for rupture, orthopedic and other defects, and in boys for any abnormal condition of the genitals. Parents are invited to be present at the examination, where they can consult the examiner at the time.

After examinations are completed, notices are sent to parents advising them to visit the various

Zone hospitals for further consultation. If, after a reasonable time, they have not consulted a physician, the school nurse visits the home. Owing to the ready response of parents, the home visiting function of the nurse is reduced to a minimum. The cost to Canal employees for the correction of defects is nominal and is based on a sliding scale proportionate to the income. The school population of the Canal Zone is approximately two thousand. While the number of defects recorded last year was not great, except among the newly arrived children from the States, the corrections, according to the hospital statistics, were 75 per cent. of the total.

How the School Functions in Health Control

The school department presents as a part of its curriculum a course of study in hygiene, sanitation, and inculcation of health habits. The course extends throughout every year of the grade schools. The teaching of hygiene and prevention of disease is so related to that part of the child's study that the child himself can play a part in the preservation of his own health and that of the community. The following health habits are particularly emphasized: milk drinking, eating green vegetables and fruits, daily elimination, baths, proper rest and exercise, personal cleanliness and neatness.

Coming from a large city in the States, one stands with mouth agape, marveling at the scrupulous cleanliness of the school buildings and grounds. This is a result of a part of the daily training which the child receives. Not an apple skin, a scrap of paper, or any other débris will be found around the buildings or grounds. Proper receptacles are provided for all waste. Personal neatness and beauty of environment are drilled into the young minds.

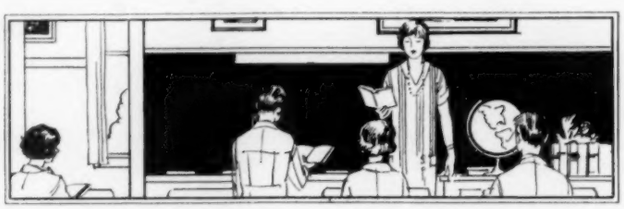
Physical training is included in the course of study in the high school. The requirements for boys are swimming, gymnastics, wrestling, and a selective list of handball, tennis, basketball and the like. For girls the requirements are swimming, gymnastics, dancing, and a selective list similar to that of the boys. All pupils taking physical training are required to submit to a rigid physical examination and are at all times under the supervision of the physical director. Swimming is the choice exercise among the pupils and this is natural since swimming is the most popular sport in the tropics. It is rare to find a child over 5 years of age who cannot swim. The pools and beaches are crowded daily after school hours. These sun-browned, brown-skinned kiddies soon become experts, for they indulge in this exercise the year round. Through zeal and hard work the physical instructor has developed swimming teams that have carried off not a few honors in competition with their fellows in the States.

While the bureau of clubs and playgrounds is primarily interested in recreation, it cooperates in a certain amount of health supervision. A representative of the bureau is on duty at all times with the kindergarten supervising the children's play. Another representative gives instructions in physical training in all its phases. The recreation committee selects the class of moving pictures that will have the best influence on the young mind. Movies, playgrounds, and games are made available for all. The tennis courts, handball courts, bowling alleys are all under the supervision of the bureau. The most significant fact is that the play and recreation are so well organized and supervised that the children are eager to take advantage of the sports. This is conducive to vigorous physical and mental health; in the Zone no one sees the street corner loafer or poolroom habitué among the youths.

Entering Spotless Town

By steamer you reach the Canal Zone from New York in eight days. Leaving this bustling city of western civilization, you sail southward on the placid Gulf Stream with a stop four days later at the sleepy, lazy little islet of Haiti. Four more days across the choppy Caribbean Sea and you land on the Zone. Beneath a brilliant sunlit tropical sky by day, a dazzling moon by night; in a setting of age-old jungle, palms and varicolored flowers, lies the "Isthmus of Spotless Town," a strip of land under control of Uncle Sam, forty-seven miles long and ten miles wide.

The sunshine and fresh air, large open spaces, roomy and airy houses, immaculate cleanliness of streets and roads, neat public buildings with their green lawns—all suggest a feeling of well-being and physical fitness. The children are shining examples of this immaculate cleanliness, and of pep and animation. Here are brown-skinned slender youngsters; underneath the brown skin are healthy muscle and tissue. They have been "made that way" through an efficient method of health control.



Preventing Crime

By Treatment and Education of the Mentally Ill

HENRY H. GODDARD

CRIME is failure to play the game of cooperative living, which we call civilization, according to the rules. This failure results from several conditions. First, we have allowed children to grow up without realizing that they are members of a cooperative organization; therefore they do not appreciate the significance of the rules (laws). The consequence of this is that when a law runs counter to their personal pleasure, not realizing that it is a part of the cooperative plan, they refuse to obey.

Second, there are many persons of such limited intelligence that they cannot understand the principle of cooperation in the larger sense of group solidarity. They cannot comprehend the abstract principle and so cannot apply it to a concrete situation.

Third, many persons are sick and cannot properly control themselves.

It is common to divide crimes into premeditated crimes and crimes of passion. There is a feeling that the crime of passion is more excusable and that the premeditated crime is not excusable at all. It is easy to show that this feeling does not take into account the real conditions for crime.

Criminals Are of Three Types

The healthy individual of normal intelligence who realizes the significance of civilization as cooperative living does not commit crime. If that proposition is not true there is no hope.

If it is true it follows that the criminal must be (1) unhealthy, (2) subnormal, or (3) possessed of a perverted notion of his relation to the group. Current attempts to prove that our prison populations are mere samplings of the general population, good, bad and indifferent, seem to be a *reductio ad absurdum*. If the criminal is not an exception to the rule, peculiar in some way, there is no hope. One man is as likely to become a criminal as another. We shall do well to take such conclusions with considerable salt.

We are as yet in no position to evaluate accurately these three factors. We are just emerging from the old doctrine that criminals are bad men, grown-up bad boys. We are still so much under the influence of that doctrine that it is practically impossible to have an unbiased study of the situation. Moreover the extreme views of some that have accepted the new doctrine are, for the time being at least, adding confusion to the situation and furnishing ammunition to the enemy. For example, one man reported that all the prisoners in the penitentiary of which he was warden were feebleminded. This, of course, was an absurdity that could only do harm.

What we need at the present time is a scientific classification of crimes and a careful diagnosis of each offender in each kind of crime. It is not difficult to guess what we would get, in a general way.

Need Scientific Analysis of Crimes

For example, at the extreme upper end of the scale we would have crimes of technical violation of obscure or ambiguous laws, such as the case of a prominent literary man who went to the Atlanta penitentiary some years ago for a violation of the postal laws of which he was ignorant and only technically guilty. Of such cases there would be very few. Such a person is not feebleminded or sick and cannot be said to have a very perverted notion of his relation to the group; he is merely a little careless of the significance of his conduct.

If we consider the widely known Dr. Cook as representing the group of criminals who seek to obtain money by cleverly devised plans involving deception and fraud, we have a group who are not feebleminded, may indeed be mentally diseased and certainly do have a highly perverted notion of their relation to the group. This is a much larger group than the former but still relatively small.

Forgery is a good example of a crime that is largely due to disease of mind. On the one hand, it is so thoroughly and universally known as a high crime that it is not usually resorted to by a person of sound mind. On the other hand, it requires more intelligence than is possessed by the feebleminded.

As we go down the scale to the more brutal and crude crimes, we come to those that are generally committed by the feebleminded. In premeditated crimes by these persons we find simple planning and crude reasoning. In the

crimes of passion we find a natural impulse or emotion uncontrolled by intelligence or reason.

From the foregoing it is clear that the proportion of mental defectives in any given prison will depend on the types of crime prevalent in the locality served by that prison or during the period of time being considered. It is well known that the type of crime varies with the latitude and longitude, the season of the year and the price of wheat.

Feebleminded Need Special Training

It has been said that every feebleminded person is a potential criminal. The statement is true and is a convenient way of calling attention to the fact that the feebleminded need special training if we are to escape a large crop of criminals of the more brutal type. On the other hand, the statement must not be taken to mean that all the feebleminded will become criminals.

If we were discussing the broad subject of education, instead of mental defectives, it would be just as pertinent to say that every child is a potential criminal. It is true that all children are born with instincts or impulses that would lead to criminality if not controlled, curbed or checked. The difference is that the normal child rather easily understands the necessity for control while the feebleminded child does not. Hence ordinary care results in the normal child becoming a good citizen whereas the feebleminded must have extraordinary care.

The logic of this is clear. Our methods of training, including the school system, fit the normal child because they have been developed to fit him since normal children are the more numerous. By the same token they do not fit the subnormals. Therefore, we must make a special effort if we are to save these from criminality. It is not that they are more criminally inclined, but only that they have less power of control.

Consider the situation from the standpoint of school training. The mental defective can not learn the things that we require him to study. He is thus at once deprived of the joy and happiness that come from achievement. He marks time. He is unhappy. At the end of a longer or shorter period he goes out from school not having learned anything that can help him either to earn a living or to occupy his time. What wonder that he often becomes a criminal!

Another phase of this subject should receive attention. We have spoken of the criminals that are unhealthy, including those with diseased minds. One of the conditions that we have in mind is commonly called psychopathy—a mild mental mal-functioning, far removed from insanity and yet sufficiently serious to cause an otherwise upright individual to commit crime. This condition is often found in children and not infrequently complicates the situation in cases of feeblemindedness.

Uncomplicated feeblemindedness is a rather simple condition and easily handled. While inherited peculiarities of temperament may be in evidence, on the whole the child is rather docile and quiet, remaining always at the intelligence level at which he stopped developing.

But as soon as this condition becomes complicated by a disturbance of function—psychopathy—we have our most difficult problem. The potentiality for criminality becomes high. Only with the greatest care and insistent training will he be kept from criminality. These psychopaths are being made, sometimes in the schools and more often in the home by unwise treatment.

For the psychopaths we have no statistics. For the feebleminded criminal there are many. As an indication of the situation, I quote from the report of the National Committee for Mental Hygiene. This committee has recently examined and studied 10,000 prisoners.

"The surveys have shown that as many as 60 per cent. of feebleminded prisoners are classifiable in terms of deviation from average normal mental health and are suffering from conditions that appear to bear a causal relation to their antisocial behavior. Last year in a study of 3,451 prisoners in the Texas penitentiary, it was found that only 29.4 per cent. could be classified as normal, and of 226 inmates of 18 county jails in that state only 14.2 per cent. were found to be normal. In a recent study of 1,288 prisoners in 34 county jails and penitentiaries in New York State 76.6 per cent. showed a distinct mental deviation along some line."

All this seems to indicate clearly that the problem of crime is to a large extent a question of health, largely mental, and the proper training of the mentally deficient.

Feeblemindedness, save for a few accidental cases, is hereditary and cannot be cured. Therefore, the feebleminded must be trained. Psychopathy and insanity are not inherited. They may be cured—in many cases if not all.

The Medicine of the Sun

Madame Curie and the Radium Institute

FREDERICK BRYANT

THE use of radium in the treatment of disease is distinctly a surgical application of light. The surgical use of radium has so successfully survived the experimental stage that its future in medicine is guaranteed.

Of the myriad of remedies that have been attempted in the treatment of malignant disease, only two have endured the crucial test of time—surgery and radium, or the old and the new surgery. The new seeks not to supplant the old, but to assist it in various combinations and in suitable localities. In addition to radium the new surgery includes to some extent the employment of the sun and the artificial production of the sun or different components of its spectrum.

In the capital of France, we made our way over the Seine to the Latin quarter where at 1 rue Pierre Curie is the radium institute of the University of Paris. Here may be found the laboratories of Madame Curie. As we drew near this unique scientific personage, the most illustrious woman of science of all time, we mentally reviewed the events of her unusual career. The history of science in her case reads more strangely than fiction.

Begins Life of Self-Sacrifice

Marie Sklodawaski was born in the Polish capital, Warsaw, in 1867. Her father was a teacher. The family was large and needy. She was left motherless at eight, and at that time began her life of self-sacrifice by assisting in the care of the home. Even in those early days visions of a scholarly future and the great University of Paris haunted the ambitions of this humble maid of Warsaw. She worked at whatever her hands could find to do, as housekeeper or as governess, and with the scanty funds thus obtained, in 1890 she passed through the proud gates of Paris. Little an onlooker would have suspected that this unpretentious Polish woman was to become one of the most important scientific personages in the world.

During her first five years at the great university of her dreams, remarkable changes took place. She was unknown and unaided, yet by the brilliancy of her ability to concentrate on the subject in hand and her masterly technic to execute to the end, she had profoundly impressed the department into which she came. Two doctorates had been granted her, and she was soon to be married to the brilliant professor of chemistry in the university.

The discovery of the roentgen ray had stimulated scientific investigation of light waves the world over. It was the renaissance of light. The man most energized by this knowledge and most capable of profiting by it was Henri Becquerel, professor of physics in the University of Paris. His studies in fluorescence led him to the discovery of a radioactivity in uranium.

Becquerel had discovered a new property of matter. Being a physicist, it was not within his province to isolate the radioactive element he had discovered. To proceed further required the highest degree of skilled chemistry. He

Madame Curie has worked constantly to aid science and mankind. This famous woman scientist is shown here attending a conference of the Faculty of Medicine at Madrid, Spain. Her daughter is on the extreme left.

International

International

The visit of Madame Curie to America was the honorary climax to her life. American University women presented her with a gift of radium.

acted with becoming wisdom in handing this most profound chemical problem over to Pierre Curie and his scholarly wife, both master chemists.

Never in the history of learning has there been such a unique scientific wedlock as that of Monsieur and Madame Curie, two of the most eminently qualified chemists, entering hand in hand on the most profound problem of the nineteenth century. In an old building, a sort of shack with a glass roof, hot in the summer and cold in the winter—an inadequate shelter even from the rain—they undertook the conquest of radioactivity.

Neither was in robust health; Pierre suffered from rheumatism and the cold. Imagine the physical exertion necessary to grind a ton of hard pitchblende to a fine powder, subject it to water, boil it with the strongest acids and potash, and to follow this by hundreds of crystallization processes before the hidden entity could be revealed.

Radium Is Isolated

In 1898, the gigantic task was accomplished. A minute residue had been obtained that possessed a radioactive strength two million times greater than the original uranium salts. It had required two years of intense cooperation, wherein the genius of the one was made double by the genius of the other. Without such cooperation, this profound chemical accomplishment might have been delayed for many years or perhaps never have been attained. Possibly either alone would have failed. The husband possessed the vision; the wife the technic. Pierre Curie saw with the vision of a discoverer the unknown country afar off, while Marie Curie laboriously charted the unknown seas. To this scientific union of vision and ability to translate that vision into stern reality, the world owes one of the greatest scientific discoveries that has ever been made—radium.

What had been discovered? A quarter of a century has elapsed and we are not yet ready to answer that question, so marvelously profound is the nature of the element. We can only answer as far as we have learned.

Its discovery has upset all previous theories as to the composition of matter and has ushered in the electron theory. It has given us a new energy—the energy of the atom. It has opened up an unknown country, the interior of the atom. It has given to medicine a remedy of ever increasing value and has contributed one of the brightest hopes in the treatment of that mysterious scourge of the race, cancer. It has satisfied philosophic thought as to the immortality of the heat of the crust of the earth and the sun. It has given an added evidence of design in Nature and of a never-ending guarantee of earth and sun consistent with man's future needs. Finally, as far as we now know, it has yielded us the long sought philosopher's stone.

Since the beginning of philosophic thought and learned speculation, the thinkers, the alchemists and those who represented the highest products of scholarly advancements of their times, have expressed an existing belief that some fortunate one would some day discover an all powerful element, or philosopher's stone.

That this vision was not without a degree of scholarly speculation is evidenced by the qualifying adjective. This conception became more definite as scientific thought became less vague. At first it was a mere visionary dream of miracles, like the tales of Aladdin's lamp. Later, these concepts became more rational and formulated, resolving themselves around an element that was to possess gigantic energy. It was to be able to change one metal into another, a common metal into gold, and it was to have the power of healing diseases.

Thus far in the progress of scientific discovery and the development of philosophic thought, radium best answers these varied anticipations. It is the most gigantic energy yet discovered. It gives off heat, yet it is a fire that never goes out. It is in a constant state of transmutation, and from itself gives birth to another element, helium, and finally changes from one form to another until it ultimately reposes in an entirely different element, lead. It also answers the healing requirement of the philosopher's stone in that it is an accepted remedy of ever increasing value. Who can deny then, that as far as we now know the Curies discovered that rare,

powerful and magic element that has been the philosophic dream of the ages?

An Interview with the Scientist

We found Madame Curie at the Radium Institute busily engaged in the investigation of radioactivity. She received us in a gracious manner and placed her laboratories at our disposal. We met young men, speaking a variety of tongues, who were investigating radioactivity and doing research on the structure of the atom. To this department of science, Madame Curie has devoted every energy, a lifelong vigil. We gain no opinion from her regarding the therapeutic use of radium. She prepares it, while others apply it. This is done by Dr. Regard in the twin laboratory across the way, the Pasteur Institute.

Madame Curie appears worn, debilitated, and older than her years. Her close communion with the penetrating rays have left on her their anemic effect. Her hands are the hands of toil; her uniform the black alpaca of the laboratory. There is no confusion, no lost motion in her work; her concentration is complete. Chemicals are her keyboard, and she plays them as the old masters played their melodies. It is hard to believe that this timid, retiring woman has delved deepest into nature's mysteries and has become the great discoverer of the age.

Madame Curie has two daughters to whose care and training she has given every motherly attention. The elder daughter now assists her mother and through her Madame Curie hopes to continue her work.

Another well developed trait in the life of this great woman is her patriotism, both for her native and her adopted country. Her regard for Poland was expressed in one instance when she gave the name polonium to a radioactive element which she had discovered.

During the World War she rendered a signal service of devotion to her adopted country, for her laboratories, her radium, her very life, all were at the disposal of France. The frail little woman carried on the roentgen ray and radium work for the French forces. Her work was almost constant, for she personally attended to the transportation and installation of apparatus. At times when help was unobtainable, she loaded and unloaded fragile instruments, and even learned to run an automobile. She has always been dominated by one ambition—service to science and mankind.

Madame Curie is the only person who has twice participated in the Nobel prize. While she has received more tokens of appreciation and recognition from scientific organizations throughout the world than have been granted to any one person, yet her visit to America was the honorary climax of her life. No foreign visitor in the history of our nation ever received such honors.

Receives Gift of Radium

American women presented her with a vast gift of radium which she received from the hands of the late President Harding. Eight institutions of learning granted her honorary degrees.

At Smith College, President Neilson said, "First among women of all ages, for the brilliance, magnitude and significance of her scholarly discovery; the peer of the greatest benefactors of mankind in the unselfishness with which she has devoted without tax or toll the results of her research for the service of humanity."

France has had many extraordinary women and the hand of Providence has seen fit to enact this, the most sublime accomplishment of womankind, in the city of Paris bedecked with the memorials of greatness. Fit place, indeed, for the memorial of the greatest accomplishment of science.

But the Maid of Warsaw will need no memorial of marble or bronze, because she will have written her name indelibly in the hearts of suffering humanity as long as the cancer plague pursues, and scientific generations of the future will look back on this patriotic scholar as the harbinger of the new energy and as the one who marked the turning point in the scientific evolution of the twentieth century, when man in his need found a new energy.

This is the second of the series "The Medicine of the Sun." In the third article, which will be a part of the November issue, Dr. Bryant will take the readers of HYGEIA through the sun cure clinic of Dr. Augustus Rollier.—THE EDITOR.

Madame Curie in her laboratory at the Radium Institute, Paris, France.

Sanitary Drinking Water for Rural Schools

E. E. EPTING

With the photograph and the brief explanatory article, Dr. Epting has sent a blue print of the flute sanitary drinking fountain. It is impracticable to print this in HYGEIA, but the editors will be glad to lend the drawing to any interested community leader or rural health agency.

ALL schools should provide their pupils with an adequate supply of pure drinking water, and school trustees should see that care is taken to prevent contamination of surface wells. The use of the common drinking cup should be forbidden, as it now is in many states, for diphtheria, colds, tuberculosis, septic sore throat, scarlet fever, measles, pertussis, mumps and other diseases may be spread by this means.

The problem that confronts health workers is to find a method by which the common drinking cup can be abolished, especially in rural schools where running water and sanitary bubblers cannot be provided.

The more progressive rural schools endeavor to abide by this ruling by requiring each child to provide himself with an individual cup. This is not entirely satisfactory as very often a child will not have a cup and will borrow from another.

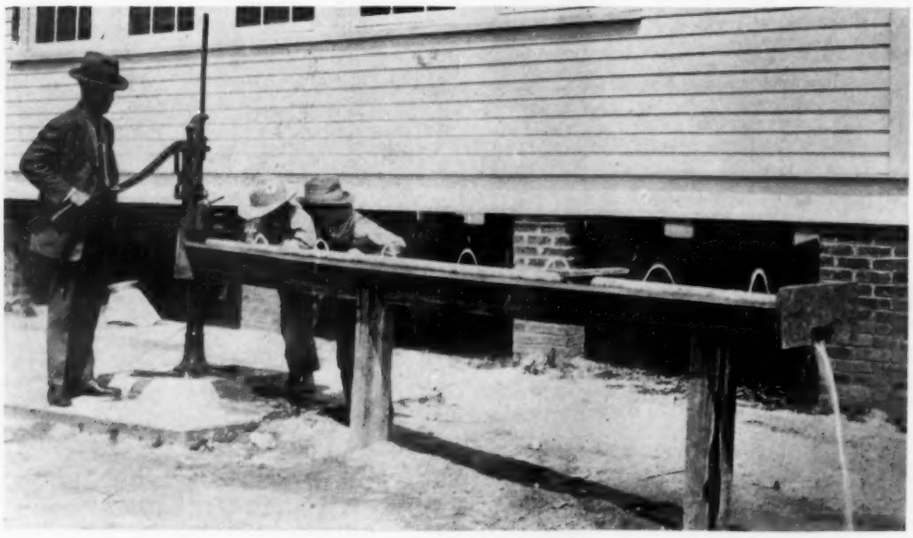
The story is told of a new teacher in a rural school who was concerned about drinking cups. One of the boys informed her that each had his own. To verify this, the teacher asked each pupil to produce his. There were forty-three pupils in the room, and there were only fifteen cups. The twenty-eight who did not have cups borrowed, of course.

It is a burden on the teachers to see that each child has his own cup and does not dip it into the pail or pass his cup to another child. Paper cups can be used, but this necessitates an expense for the school and the nuisance of keeping the school premises tidy from the used cups.

Flute System Attractive and Clean

A device that originated in Anderson County, South Carolina, has proved satisfactory. It is an arrangement of sanitary bubblers, and it may be had at any rural school for small cost. The device consists of a moderate priced pump, similar to the Myer's force pump, which has attached to the side connection a 1½ inch pipe, sixteen feet in length with ¼ inch holes drilled at intervals of 14 inches, the extreme end being plugged. By pumping the water through this fountain arrangement from seven to eight children can drink from an individual spray.

No name has been applied to this system, but it might well be called the "flute system" from its resemblance to the musical instrument. It costs only $25 or $30 to install, it furnishes fresh, clean, cool water from the well, and it eliminates contamination by the bucket and chain and constant spilling of water back into the well. From a sanitary point of view it has proved entirely satisfactory. Its novel arrangement furnishes amusement, and it encourages the child to drink more good, clean water.



Anderson County, South Carolina, found that this sanitary drinking system was a satisfactory solution of the problem of individual drinking cups in small rural schools.

Tooth Troubles

FREDERICK B. NOYES

THE teeth are the most troublesome of all our organs—we have trouble getting them, we have trouble keeping them, and after they are gone we have more trouble with artificial ones. When one sees a baby with swollen gums and drooling mouth chewing on everything he can find to put into his mouth, one realizes that this first stage is unpleasant.

Teething is a real disturbance. The teeth are embedded in the substance of the jaw and their growth produces a pressure which is often great enough to cause reflex disturbances of the nervous system. These are manifested not only in irritability and restlessness, but also in digestive disturbances, vomiting and sometimes convulsions. The old-fashioned habit of giving the baby a large ivory ring to play with and bite on is a sensible thing, for the gum tissue through which the tooth must literally bite its way is tough fibrous tissue offering great resistance. Biting on the ring forces the tissue against the sharp points or edges of the teeth and helps them to bite their way through. The old family doctor was in the habit of lancing the gums, and when properly done and at the right time, it gives prompt and complete relief. It is especially helpful for the baby molars. It need not, however, be a routine or even a frequent practice.

The habit of thumb sucking is often the cause of serious tooth troubles, especially if it is continued after the teeth are erupted. Thumb sucking for the baby and for the child 6 years old or older are different things. A baby may suck the thumb because he is hungry, or he may do it because of irritation or inflammation in the nose or throat which is relieved by the secretion produced by the sucking. Both of these causes should be examined, and if possible the habit should not be allowed to become established. This, however, is much easier to advise than to accomplish.

Many methods of preventing thumb sucking have been tried: painting the thumb with some bad tasting substance such as aloes; binding the thumb with adhesive tape; tying on mittens; sewing a stiff sleeve into the nightgown so that the elbow cannot be bent and the hand carried to the mouth. Many a mother will relate that she has tried all schemes and failed, and many a baby has sucked his thumb without causing any damage. The pressure on the growing bone, rather than the sucking, causes injury, and if the thumb is sucked without pressing, little or no effect is produced.

The thumb sucking habit in older children is a different story. Persistence in it almost always changes the relation of the front teeth so that normal breathing is impossible; the lips can no longer be closed easily over the upper incisors and mouth breathing becomes a necessity. In many cases the mental effects of thumb sucking are more serious than the mouth deformity. When the effort of the adaptation to the requirements of life become too difficult, and "don't do this," and "don't do that" is a constant command, the child will be found curled up in a chair sucking his thumb. He has slipped away from a world that is too hard, into one of his own imagining, where everything is rosy and pleasant. This is the same mental reaction that leads to drug habits and mental breakdown in adult life. Dr. Silas Weir Mitchell was probably right when he said: "At this age (6 years old and older) the habit can be cured only by getting some thought, some suggestion, associated with the act in the subconscious mind that is strong enough to prevent its repetition. This is a real problem in psychology but it can be accomplished."

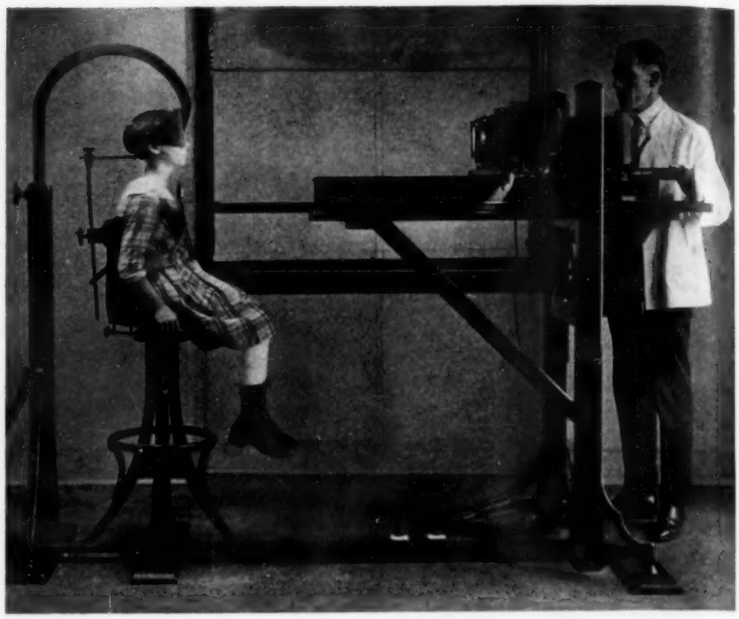
Tooth Decay Is a Disease of Youth

Why do teeth decay? Why do they seem to melt away in one mouth and in another remain hard and perfect through life? How teeth decay and how the destructive agents act has been worked out by such men as Miller, Black and Williams, but the question of why they decay is still unsolved.

Decay of the teeth (caries) is a germ disease of youth to which the adult normally acquires an immunity. Twenty-five years ago Dr. G. V. Black showed that in most persons there are no centers of decay started between the beginning of adult life and the years of decline, and that most cavities that develop during this period had their beginning in youth. In many ways, tooth decay is similar to the other germ diseases of childhood, such as measles, diphtheria, scarlet fever, whooping cough and mumps, and, usually, the child whose baby teeth decay is also more susceptible to other germ diseases.

Change of environment, and particularly an environment to which the person is only partly

adapted, always increases the susceptibility of the animal to germ diseases. The child is essentially a little animal, and its development, both mental and physical, from birth to 8 or 10 years is primarily the development and control of its powers and functions. The child has to learn to interpret the sensations of touch, sight, hearing and motion. Civilized environment has greatly disturbed this development both in order and character. For example, the centers in the brain that control the arm develop first the control of the shoulder, then the upper arm, then the forearm and finally the fingers. In school, the child is too often expected to learn to use the fingers in writing without any education of the muscles of the arm and shoulder. This is only one illustration of the thousands of ways in which civilized life has perverted the education of the individual. The city child is in an abnormal environment and one to which he is only partially adapted, and it is for this reason that he is especially susceptible to germ diseases and disturbances of function.



Courtesy Rochester Dental Dispensary

That all dental irregularities may be corrected, the Rochester Dental Dispensary, Rochester, N. Y., takes a complete photograph of the child's teeth.

The slogan "A clean tooth never decays" is only partly true, for in many well cared for and apparently clean mouths, the teeth decay rapidly. In such cases eternal vigilance is the price of the denture. Good mouth hygiene for all children would reduce enormously the amount of dental work required for adults.

The teeth decay first in the grooves of the grinding surfaces of the molars, where the structure is almost always slightly defective. This is true of both the temporary molars and the permanent ones. Future decay can be prevented by carefully cleaning the grooves, removing any disintegrated enamel and filling the defect with black phosphate of copper, an insoluble, hard and sticky substance.

Children whose teeth have been neglected often have gum boils. These are really abscesses which form at the ends of the roots from infection through the pulp (nerve) of the tooth. Such an abscess is a menace to a child's health and if it cannot be treated and cured the offending tooth should be removed. When it is necessary to remove a child's tooth, it is often important to keep open this space for the succeeding permanent tooth.

When Teeth Are Knocked Out

Accidents often occur to children and young persons in which the teeth either are knocked loose or entirely out of the mouth. If the teeth are knocked loose, they should be forced back into position at once and the jaws closed to see that they meet properly the teeth in the opposite jaw; they will soon become firm. If the teeth are very loose, they may have to be wired or tied to the firm teeth for a few days. Later, one or more of the loosened teeth may turn dark in color; this indicates that the pulp (nerve) has died. It is necessary to go to a dentist at once, have the tooth opened, the dead tissue removed and the root filled. If this is not done the tooth will become abscessed.

When a permanent tooth is knocked out, it should be placed in a bottle of sterilized water (water that has just been boiled will answer) and taken to a dentist as soon as possible. He will drill into the tooth, remove the pulp and after filling the root force the tooth into the original socket, and, if necessary, he will wire it into position for a few days. The tooth will usually become perfectly firm and will be useful for five or even ten years. Then the root is slowly absorbed, and, finally, the crown becomes loose and drops off like the crown of a temporary tooth. But in the meantime, it will have served its purpose in the development of the denture and the face, and when it is lost an artificial substitute can be made for this space.

Probably no habit of personal hygiene is of greater value to a person than that of brushing the teeth; it is a habit that should be acquired early in life. The child should be taught to brush his own teeth as soon as possible and with absolute regularity morning and evening. To brush the teeth so as to clean every surface of every tooth requires skill that is acquired only by thought and effort. A child cannot be expected to do this without careful instructions and training.

When Children Are "Bad"

EDGAR A. DOLL

SPEAKING generally, a child's conduct is good or bad as it makes life easier for us as adults or puts us to inconveniences. It is extremely difficult for us as parents or teachers to apply a standard of conduct based on the child's intent or the child's welfare rather than our own convenience, comfort or pleasure. When, therefore, the conduct of children conflicts with our own immediate happiness, we are prone to ascribe some malicious intent and to look for antisocial motives.

From the biologic point of view, conduct is neither good nor bad. It is activity. But if humanity insists on placing values on conduct, then biologically that behavior is good which increases the adjustment of the individual to his surroundings, and that conduct is bad which aggravates maladjustment. We are all happier when adjusted than when are are not adjusted. We may even go so far as to say that happiness is the mental reflection of the situation that a person experiences when he is adjusted, and that unhappiness is the discomfort of maladjustment.

Happiness Is Our Biologic Goal

Happiness, therefore, is our biologic goal. As animals we are happier when we behave than when we misbehave.

From such premises, it is not difficult to see that misconduct is one of the consequences when our personal desires run counter to social conventions. What is happiness for one person is not always happiness for his fellows. This entails a constant readjustment of one's native tendencies to the standards of the group.

When we look on children's misconduct from this point of view, the problem of child behavior is illuminated with a great new light. This new point of view not only explains misbehavior but enables us to bring children's native activities under the control of social conformity.

During the past ten years the study of child intelligence has greatly assisted us in understanding child conduct and misconduct. These studies have shown that children commonly fail to do what we consider the right thing because they fail to understand what is desired of them. They have not been adequately instructed, they have misunderstood, or they have lacked intelligence to understand or to judge well. We must not forget that example is stronger than precept, and that many of the undesirable activities of children are the result of imitation of other children whose social training has been neglected or unsuccessful.

But the study of intelligence does not explain all the difficulties of child behavior. More recently we are beginning to understand that the emotions of children play a much more powerful part in determining conduct than has previously been supposed. We have been inclined to look on children's emotions as consequences of their actions. We are beginning to understand that these emotional disturbances may be the most important determiners of child behavior. Emotional instability is now seen to be both the cause and the effect of misconduct, thus creating a vicious circle of ever-widening scope.

Through the understanding of the mechanisms that determine emotional disorders we may look for a more rational and more hopeful method of dealing with children. Heretofore, good conduct in children has frequently been obtained at a tremendous cost to the child's later mental health. Antagonisms, repressions and nervous conditions are the prices they have paid.

When we examine the emotional mechanisms of children, we find four types of emotional disturbances. These may be classified as follows:

1. There are those disturbances that are normal to the growing child and that reflect the natural influences of the development of his personality.

2. There are those disturbances caused by some abnormal physical condition, usually subject to remedial medical treatment or correction.

3. There are the disturbances arising from strictly social causes.

4. There are the disturbances that are due to unfortunate mental organization such as con-

flicts, attitudes, faulty habits, uncontrolled instincts.

In these days when parents have so much more time to observe their children than formerly, and have fewer children to observe, an unusual degree of attention is being given to the natural activities of children. This leads to alarm on the part of those who may not be sufficiently informed as to what is normal child conduct.

Parents Expect Too Much of Children

We must not forget that children are naturally restless, active, flighty, volatile in their interests, and with but little sense of responsibility. We forget that both in judgment and in acquired information they do not have the ability of adults. We are, therefore, more inclined to be impatient than just. We are too prone to praise or to blame without much effort at trying to understand. We forget that the child is happier when he does well than when he does poorly, and that his most natural tendency is the desire to please since this brings him happiness.

While we know that such things as erupting teeth and the physiological changes of adolescence are accompanied by emotional disturbances, we are all too careless in failing to give due weight to them. On the other hand, too much regard for physical factors may result in the child's taking advantage of a too sentimental sympathy. In adult life, we must all control our emotions as best we can regardless of our physical condition.

When we remember that the majority of these emotional disturbances are natural and normal, are incidental to the child's social adjustments and are of comparatively brief duration, we can save ourselves time, energy and worry by more or less temporizing with the condition until it is outgrown.

Recent work in medicine and hygiene has shown that the more serious emotional conflicts of children and adults are apt to be associated with some abnormal physical condition. Every emotional disorder has some physical basis. Dr. Henry A. Cotton, medical director of the New Jersey State Hospital of Trenton, has shown the relationships of chronic poisoning or focal infections to insanity. No single cause of mental instability, he believes, is so important as toxic conditions arising from focal infections in the teeth, tonsils, gastro-intestinal and genito-urinary tracts and other sources.

Remedial work with the insane, which has been so successful in curing functional mental disorders, has been carried over to the mental hygiene of children on a preventive basis. Removal of infected teeth and tonsils among school children has resulted in almost complete eradication of juvenile rheumatism and a large number of recurrent emotional disturbances.

The social causes of emotional disorders have heretofore been considered most important. It is so easy to ascribe disturbed behavior to the immediate precipitating factors. Unusual environmental stresses have long been accepted as fundamental causes of conduct disorders.

Only recently have we realized that environment seldom causes trouble unless a person has some sort of organic or functional weakness. We ignore crises in the environment of physically sound persons because they produce no appreciable effects other than temporary discomfort, sorrow or pain. The person in normal health has a remarkable resistance to such exigencies. His emotional reactions are sufficiently resilient to enable him to readjust in a brief space of time or else to relegate the effects to some harmless basis. Nevertheless, no one denies that social circumstances do sometimes produce emotional disorders of profound significance or of prolonged duration.

That such phenomena are not reducible to strictly physical causes is probably only a shortcoming in the present correlation of physical and mental science. More and more, so-called mental causes of emotional disturbances are losing ground in the favor of physical causes.

For present purposes, however, it is both necessary and permissible to treat the social causes as if they were fundamental and direct.

How Emotional Disorders Must Be Treated

In the final group of causes, it seems possible to include those emotional disorders that apparently develop a mental organization or behavior patterns that are not appropriate to the environment. I have reference to habits, learning, attitudes, tastes and actions that are abnormal from the standpoint of the happy relation of the child to his fellows.

The repression or fixation of some instinctive tendencies or the too free development of others, the exaggerated importance of familial relationships, the overindulgence in fantasy or romantic revery are some of the experiences that tend to produce abnormal emotional reactions.

Analysis of emotional disorders should include a complete study of the individual. No study of emotional disturbances can be considered adequate that does not include some treatment of all the other influences involved in individual adjustments.

The technic for such a study is well known to physicians and psychologists in general. It has been their experience to find that many emotional disorders are merely secondary symptoms of maladjustment between the social demands on an individual and his native incapabilities. Thus, we find emotional disturbances developing on the basis of intelligence which is either too little or too much for the demands being made on it, or when the demands are not commensurate with the type of intelligence as opposed to the level of intelligence that a person possesses.

Or we find a person in an environment that refuses to recognize his individuality as to temperament, interests and motives. We also find numerous individuals in whom maladjustments develop only after peculiar combination of events.

Teacher Must Study Child's Emotions

The school has a responsibility in the prevention and treatment of emotional disturbances. The classroom teacher with her attention absorbed in forty children as a group, with a certain course of study to carry through, and with endless demands on her time, can perhaps be pardoned for failing to understand each individual child completely.

Nevertheless, children are extremely sensitive to injustices and react unfavorably to severe criticism. The ordinary child really does his best to learn. Success for him as for us is much more gratifying than failure. If he does not learn, there is usually some good reason either in his own innate weaknesses or in the quality of the instruction itself. Classroom conditions, requiring as they do the general advancement of the class as a whole, frequently result in poor learning on the part of individual children. If, then, the child is held to too strict accountability in spite of conscientious effort on his part, emotional conflicts are almost inescapable.

Browbeating of children in school is unforgivable from the standpoint of mental hygiene. Teachers should try to understand why it is that children fail, rather than try to encourage success by giving them more of the same misunderstood instruction. There should be more praise and less criticism, more patting on the back above the waist and less below, both actually and figuratively. There is always some good reason for a child's failure. In scientific psychology wilful misconduct in the old sense is no longer a satisfactory explanation of poor adjustment.

We conclude then that emotional disorders in children are frequently normal in character and temporary in duration. They are almost always founded on some physical basis. They occur most frequently in those periods of readjustment during which the child is progressing from one stage to another toward achieving ultimate social independency. While some physical or mental basis is usually necessary before a serious emotional disturbance arises, there is usually some precipitating environmental cause. In the treatment of these disorders, we are obliged to study the entire individuality of the child in its physical, mental and social aspects.

Emotional disorders may be corrected by providing a healthy physical condition, by encouraging normal behavior habits, by reducing to a minimum those environmental demands that are beyond the capabilities of children.

The greatest concern of any nation is the mental health of its children.

The Family Medicine Closet

FRANCIS W. PALFREY

THE family medicine closet is an important part of the home to those who live where medical attention and supplies can not always be obtained. Its value, however, depends on the knowledge and judgment with which it is used. Heads of families living in the country will do well to study the subject of first aid medicine and surgery in more detail than is here given.

What follows is intended to call attention to two aspects of the subject:

1. Care is necessary to avoid doing harm by injudicious use of medicines.

2. By rest in bed with proper diet and simple nursing care, and without more complicated measures, many patients tend toward recovery under any circumstances.

In certain diseases medical or surgical treatment will make an all-important difference. In most diseases medical treatment will diminish the suffering. But the public should understand that medicine is not magic, but only the rational application of common sense principles.

Must Be Wary in Using Drugs

In the presence of disease, there is a common impulse to do something, and it is sometimes forgotten that what is done under this impulse may perhaps do harm rather than good. With modern drugs, which are capable of doing good when properly used but of doing harm under other circumstances, there is more reason for caution than with the less active drugs of former years.

Even drugs that are ordinarily harmless can under certain circumstances result in disaster. As an instance, even castor oil and other cathartics have in their use a pitfall which has caused many deaths. Ordinarily, they are safe; but in appendicitis, for example, they have often

been the real cause of a fatal outcome. The danger is that the inflammation, which is at first confined to a small organ, will spread so as to cause peritonitis. If the appendix bursts while the bowels are quiet, only a local abscess is formed and this is easily drained. But if the appendix bursts during the action of castor oil, the result is apt to be a general peritonitis, which is often fatal.

With all possible emphasis it is to be said that castor oil and other cathartics should never be taken for an abdominal pain when the distress is of unknown cause.

Dangerous substances like corrosive sublimate and carbolic acid are better not kept in the home because of the possibility that they may be taken internally by mistake.

Headache powders containing acetanilid are often abused and sometimes cause poisoning. Drugs to produce sleep sometimes cause poisoning and tend to habit formation.

Narcotics such as morphin lead to addiction with surprising ease.

Dyspepsia remedies sometimes serve to prolong the underlying indigestion.

Silver-containing preparations used daily in the nose and throat with the idea of preventing colds have sometimes caused a permanent discoloration of the skin of the face.

Another objection to having drugs on hand is that with some persons this leads to unwholesome attention to symptoms and too great an inclination to make unwise experiments. Some individuals are still searching for magic from medicines, which is impossible of attainment.

The public should cease to regard medicine as mysterious, and the essential facts which medical science has proved to be true should be generally known.

Diseases are of different kinds, as follows: (1), there are the infections such as typhoid fever, diphtheria, tuberculosis and syphilis; (2), there are poisonings; (3), there are diseases due to disorders of separate organs, where these organs fail to do their part in the functions of the body. Other diseases represent destruction of tissue by injury, through inflammation or otherwise. Stone-formation, such as in gallstones, and tumors form other classes. For the most part their nature is quite clearly understood.

Treatment for Different Kinds of Disease

The ways in which these diseases cause their symptoms are more or less easily understandable by any one who cares to obtain a little knowledge of anatomy and physiology. The symptoms of the infections are due, for the most part, to the formation of poisons by bacteria growing in the body. The formation of these poisons which invade and poison the whole body is very similar to the production of the moldy taste by mold which grows on jelly. Thus the infections and the poisonings are both reactions to poisonous substances.

Of the failures of functions of special organs, diabetes may be taken as an illustration. The pancreas fails to form enough of the substance that we know as insulin, without which the body can not make use of starches and sugars as nourishment. Heart diseases are failures of the pumping mechanism of the heart. In fractures, it is plain that the trouble is a mechanical one. In certain internal diseases, the trouble is just as definitely mechanical. For instance, the pain of gallstones is simply due to the stretching of the gallbladder when the stone tries to pass through too small a passage, obstructing the flow of bile. The effects of tumors are in large part the effects of mechanical pressure.

The special treatments of diseases are merely the logical measures which have been devised to overcome these effects. Surgery removes an inflamed appendix before it bursts, or removes gallstones or certain tumors. In diphtheria, antitoxin neutralizes the poison of the disease just as definitely as an alkali will neutralize an acid. In syphilis and in malaria, drugs do away with the parasites that cause the disease. But these special treatments are beyond the functions of the family medicine closet.

Furthermore, in most diseases there is no treatment that is actually curative. Nature instead provides spontaneous recovery if the patient survives until the force of the attack is spent.

Thus, in typhoid fever, in pneumonia, in smallpox and in measles the treatment is the support of the patient against the disease. In wounds and fractures, also, it is the natural healing and not the stitches and splints that really effect the repair.

In supportive medical treatment there is nothing mysterious. It consists only of judicious attention to many details. On the other hand, the value of medical treatment is not to be underestimated, for, as a result of treatment by a doctor, the average individual patient will improve his chances of recovery and of an early return to health. He will also be made much more comfortable during the course of his illness.

In the serious diseases and injuries the most important measure is rest in bed, a simple expedient the value of which is not always realized. Complete rest in bed, when this is necessary, requires a bed pan, an article which every well equipped household should have. For a bed urinal, a substitute can usually be found. A rubber sheet is sometimes needed, but oil cloth or newspapers may be made to serve. Inflatable rubber rings and back rests may be required but can hardly be listed among the supplies to be kept in hand.

Diet stands second in importance in the treatment of disease. A small book on diet in disease

may be worth having. A drinking tube is often needed for the very ill patient.

Since in disease enemas are sometimes better than cathartics, an enema syringe should be available.

In prolonged fevers mouth cleansing, which can be done with glycerin, boric acid solution (saturated or 4 per cent.) and lemon juice, equal parts, is important.

Of the remedial drugs, quinin against malaria may be kept in the house where malaria is prevalent; but the head of the family should be taught by a doctor how to use it. Except for malaria, quinin is better dispensed with.

Many medicines advertised in the newspapers have alcohol as their only important ingredient and are to be regarded as alcoholic liquors.

Before Taking Aspirin

For headache or neuralgic pains and for unimportant fevers, some relief is given by a variety of drugs derived from coal tar. None of these is wholly free from objection, but if any is to be taken, acetylsalicylic acid, commonly called aspirin because one brand has been advertised under that name, is the safest. The things to know about this drug are as follows: While serious results are rare, some persons are harmfully affected by it. It is somewhat weakening and is not to be used in exhausting diseases such as pneumonia. In many persons it causes an indigestion, which is sometimes relieved by sodium bicarbonate. Occasionally, it causes rashes of the skin. Its value has been exaggerated and many persons take it too frequently.

Drugs to produce sleep are still more abused and should be taken only under a doctor's advice.

Cathartics, such as castor oil, calomel and Epsom salt, have their chief place in terminating diarrhea or intestinal indigestion. As has been mentioned already, they should not be taken at random for abdominal pain of unknown cause. Laxatives such as cascara are useful for occasional constipation, but habitual constipation is better treated by other methods, such as diet and exercise. For diarrhea, bismuth subgallate or subcarbonate is useful following a cathartic. For dyspepsia, milk of magnesia or sodium bicarbonate (baking soda) are better than complicated combinations.

Cough is best dealt with by having the cause determined. Families with children, however, may be wise to have wine of ipecac for croup and tincture of benzoin on hand.

As a general rule it is not advisable to take any drugs without seeing a doctor in the hope of removing the cause of the symptom.

In dealing with injuries a knowledge of first aid surgery is more important than supplies. For wounds, the most important thing is to avoid introducing infection. Therefore, nothing should be allowed to touch the wound except sterile gauze or cotton. Slight wounds or cuts can be touched with iodin or with mercurochrome 2 per cent. and covered with a sterile gauze dressing and a bandage. Burns and scrapes may be dressed with boric acid ointment spread on gauze. For fractures, the chief requirement is to protect the injured part against motion until the doctor can treat it.

Suggested List of Supplies

The best method of filling the family medicine closet is to obtain the supplies needed to carry out what has been learned in a course in first aid. The following, however, is a list of supplies more or less desirable.

DRUGS (to be marked clearly by name).
- Glycerin.
- Boric acid solution, 4 per cent. or saturated.
- (?) Quinin (only for malaria).
- (?) Acetylsalicylic acid—Aspirin. Label "One or two for headache or for slight fever."
- Castor oil. } Label "Not to be taken for pain."
- Seidlitz powders. }
- Extract of cascara, 3-grain tablets. }
- Bismuth subgallate or subcarbonate. Label "Half a level teaspoonful 3 or 4 times a day for diarrhea."
- Milk of magnesia.
- Sodium bicarbonate.
- (?) Wine of ipecac. Label "For croup, 5 to 10 drops every four hours in afternoon and evening as preventive. In an attack, a teaspoonful."
- Compound tincture of benzoin. Label "A teaspoonful to the quart of boiling water. Inhale the steam."
- Tincture of iodin—half an ounce.
- Boric acid ointment.

SUPPLIES.
- Books on first-aid medicine and surgery, nursing and diets.
- Bedpan.
- Drinking tube.
- Enema syringe.
- (?) Croup kettle.
- Sterile gauze "sponges."
- Sterile absorbent cotton.
- Gauze bandage.
- Cotton wadding.
- Adhesive plaster.

Year 'Round Profits from Vacation

VACATION time is over. City residents are flocking back to paved streets. The summer resorts are returning to normalcy. Conversations are as replete with mention of "when I was away" as the convalescent parlor of the hospital is eternally repeating "when I was operated on."

What health lessons were learned from your vacation?

The lesson of fresh air is an important one. Fresh air is not limited to the country. Use the parks. Use the roof of your house. Use the back yard. If you must stay indoors, keep the windows open. The idea that night air is unhealthful is a myth. Your bed should be near an open window.

Vacation time was ideal for hikes and long walks. Continue hiking. Walk in town, and at the fringe of the city. Walk one station beyond the one nearest your house or office. Let the children walk to school. If you have a car, don't use it to the exclusion of your legs. Get out and walk!

Swimming is one of the joys of vacation time; it can be continued at local swimming pools. If you don't swim, learn this fall and winter. Improve your diving. If your town has no swimming pool, a rowing machine or pulley weights will keep your muscles in trim for next year.

Wear sensible clothes. Do not let your clothes bind you at the chest or waist. Wear broad tipped shoes and give your feet a chance to serve you.

Were you troubled with sunburn, freckles, or ivy poison on your vacation? Avoid sunburn and freckles by keeping out of the direct rays of the sun. The tan after exposure to the sun acts as a protection; keep it as long as you can. Study poison ivy pictures and thus save yourself an unpleasant eruption. If you are sensitive to poison ivy, injections of the ivy vaccine may be taken before you go away next summer, and in all probability you will become immune. Washing with soap and water after every suspected exposure to poison plants, followed by a rub down with alcohol, will usually act as a preventive.

Infections of the skin from cuts, bruises, or hurts should be given proper care. Parasitic diseases of vegetable and animal sources should be thoroughly eradicated before the trouble spreads throughout the household.

This summer there were a great number of skin infections from lying on the sand. Many persons returned from the beaches with the exposed skin of the arms, upper trunk, and the legs virtually covered with an itchy eruption. Sand itch seems particularly resistant to treatment. Next summer take a robe to the beach and protect your skin.

Mosquito bites and infections from scratching the bites have been frequent. The city dweller as well as the vacationer has been subject to these. Drain all standing water and destroy all breeding places of mosquitoes.

How shall you conduct yourself so as to continue the benefits of your vacation?

Do not dissipate the renewed energy that your vacation gave you. Keep active. Read a little. Write a little. Have some interest in life aside from home and business activities. Exchange ideas.

Readers may feel free to suggest beauty topics for authoritative and scientific discussion in these columns and to submit questions relating to beauty for answer by recognized authorities in medicine. Write about your special beauty problem to "Healthful Beauty," HYGEIA, enclosing a two-cent stamp.

What a Mental Health Clinic Can Do for the City

FRANKLIN G. EBAUGH

FAULTY trends of character in their children, such as seclusiveness, temper tantrums or stealing, often confront parents. School teachers, too, have frequent occasion to observe abnormalities in the behavior of their pupils. The young man or woman may be troubled by fears, anxieties, emotional upsets, depression and even delusions.

Where can all of these persons turn for needed advice? In our larger cities, especially, such problems are being met by the mental health clinic.

If such conditions of temperament and behavior are corrected early, a serious mental breakdown may be prevented. When it is known that there were 29,343 juvenile delinquents confined in institutions on June 30, 1923, the need for close contact between the community and the mental health clinic is readily seen.

Each year 50,000 new patients are admitted to the mental hospitals. This should convince us of the pressing need for the study and treatment of mental diseases in their very earliest stage. The conservation of mental health through the mental clinic deserves the support, cooperation and interest of every social organization in the community.

The mental health clinic has three functions: (1) the examination, diagnosis and treatment of mental diseases of all types; (2) the education of the community concerning mental disorders, and (3) the prevention of susceptible individuals from developing mental diseases.

Correct Physical Disorders First

Suppose a person has come voluntarily or has been referred by his doctor to the mental health clinic, what happens to him there?

First, he is given a complete physical examination. Any physical disorders that are discovered in the examination must be treated immediately, and when this is done one of the important factors of mental disease is eliminated.

Then begins the study of the individual from the mental side, including a study of previous adjustment, personality, resources and environment. A careful life history and biography is made in every case in order that the physician may know exactly the personality resources of the individual and may recommend treatment to improve these resources, to improve the environment, or to place the individual in a different environment where he can be better adjusted.

A study is made of the general behavior and activity of the person; the mood and predominant trends of his interest, and his intellectual resources. In all cases in which there is any evidence of mental deficiency, psychological examinations are made. As a result of these examinations, special abilities and disabilities are noted and this knowledge is of use in establishing vocational guidance. The mental age and intelligence quotient of all patients examined in this way can be definitely determined and will prove of great value in determining the cause of inefficiency in work and social incompetency.

The treatment recommended as a result of the physical, mental and psychometrical examinations is supervised by psychiatric social service workers who make a complete study of the person's home environment, interview employers and make arrangements for recreation interests.

Mental Disease No Cause for Shame

The mental health clinic in its relation to the community has as one of its most important functions the education of the public concerning the many fallacies and prejudices directed against mental diseases and mental hospitals. These fallacies primarily are based on ignorance and the feeling that mental diseases are always hopeless and cures are not to be expected.

A compilation of figures from many mental hospitals definitely shows that the recovery rate from mental diseases does not vary more than the recoveries in the medical and surgical divisions of general practice. In fact, many hospitals for mental disease average over 40 per cent. in their recovery and improvement rate. When one realizes that many other patients are treated successfully by outside physicians and are not referred to the mental clinic, these figures are really more optimistic than they seem when the problem of mental diseases at large is considered.

It is essential that the public understand that mental diseases should cause no embarrassment to friends and relatives, especially since the modern conception of these disorders shows clearly that no one is immune to the development of a psychosis and certain situations or combination of situations may precipitate a mental attack in any one. The mental clinic in its relation to the community aims to establish these facts and to lead to a more optimistic viewpoint concerning mental disorders than is prevailing at the present time.

In order to fit in with the scheme of education of the community, the mental clinic should be and often is a gathering place where parents may meet with physicians and social workers to discuss their children's problems as well as their own individual problems, which frequently have a close bearing in causing their children's difficulties. A mental clinic should have definite days set aside for group discussions with parents and employers, school officials and all others who are vitally concerned with mental hygiene.

It is, however, in the prevention of mental diseases that the mental health clinic plays its greatest rôle in relation to the community. It has been clearly established in the study of individuals who have suffered mental breakdowns that these disorders frequently have their roots in childhood. The experiences of the child may dominate his behavior in later life, and the poorly adjusted child of today represents the misfit adult of tomorrow.

Teachers Can Help in Habit Training

Fortunately, the community has a social apparatus in the school, in which a large number of children are gathered under the same environment where they may be studied completely. The fact that children are collected in groups gives the teacher opportunity for instilling proper habit training, emotional control and consideration of others. She has also the chance to observe personality traits, such as may result in temper tantrums, periods of overactivity, depression, or delinquencies of various sorts.

Difficulties of this kind during the child's formative years, if not corrected early and absolutely, will result in a maladjusted adult who may be on the way to an actual psychosis. The teacher should recognize that her task is not necessarily confined to the intellectual development of the child alone but that she should recognize and guide his emotional development and habit formation.

To cope with such problems the teacher should receive definite instruction in normal schools, or elsewhere, in the principles of mental hygiene. This would not leave her unprepared to tackle the problems offered by the behavior reactions of her pupils. The course of instruction would not necessarily have to be extensive but would be a real addition to the excellent pedagogical principles she has previously mastered.

But the teacher needs help; the evidence available at the present time indicates that routine mental examination of school children is fundamentally essential for the prevention of mental disease. This can be done only through well established school clinics, consisting of one or two physicians, psychiatric social workers, a visiting teacher, a psychologist, and adequate clerical help to examine a large number of school children. A traveling clinic can perhaps accomplish the most in this matter. Special examinations suggested through this agency could be made by central mental clinics in the community.

Four Ways to Stimulate a Child

These examinations may suggest to parents and teachers such important advice as this:

Stimulate interest and power of self-control in children through the cultivation of special hobbies and the utilization of special aptitudes. Stimulate proper association of ideas and active attitude in the face of difficulties, instead of allowing the child to become inactive through day-dreaming. Stimulate a sense of dependence on adults.

The plasticity of the personality of a child is so marked in the early years of school that it is possible in many cases to remodel him through correct habit training, change of environment and medical treatment.

Suggestion and imitativeness are such powerful characteristics in early childhood that they can be used by the teacher in correcting various reactive behavior upsets.

The love of encouragement in a child is so marked that this can be utilized to its fullest extent by a sympathetic parent or teacher.

These four qualities of early childhood—plasticity of personality, suggestibility, imitativeness, and love of approval—furnish the keynote from the parents' and teachers' viewpoint in promoting efficiency and mental health.

Psychopathic wards for the observation of certain children sometimes will be needed to complete these studies.

The mental clinic in the community should be in the closest cooperation with all social organizations—mothers' clubs, boys' clubs, women's clubs, rotary clubs, and federation clubs of all types which will help to disseminate knowledge concerning mental hygiene to the community in general. When this is accomplished it can be truly said that public health has made as great a stride in the prevention of mental disease, as it has in the last decade in the prevention of typhoid fever, tuberculosis, malaria, syphilis and many other diseases. A new attitude toward the many problems of mental disease and mental health will thereby be created.

A Museum for Teaching Safety

ALBERT A. HOPKINS

AS YOU leave the uptown station of the Lexington Avenue subway in New York and turn east, the prospect is rather drab and forbidding. A few doors away is one of two safety museums in the United States and the oldest. The American Museum of Safety was established in 1907, and incorporated in 1911, so it has a respectability that comes with age. But this is far from being only a respectable institution; it is a live and active organization.

The American Museum of Safety, twelfth of the world series of safety institutions, and pioneer in the western hemisphere, was founded by W. H. Tolman of New York as a result of a study of the exhibits of the Amsterdam Museum of Safety Devices at the Paris Exposition of 1900.

The American Museum of Safety opened in 1909 its first permanent exhibit rooms for the display of approved safety and sanitary appliances in the Engineering Societies Building, New York. Later, and until 1920, a museum was maintained in East 24th St., just off Madison Square. Rapid growth meant that more space was needed and, as the last lease was given up, a favorable opportunity was awaited to reestablish the museum. The opportunity came in 1923, when word was passed along that the Department of Labor was thinking of starting a museum. Arrangements were made and the American Museum of Safety was formally opened at 120 East 28th St., on January 16, 1924, Safety Day, in the presence of pioneers of the safety movement, captains of industry, and state officials responsible for the protection of the life and limb of industrial workers.

How the Safety Museum Functions

The museum is open daily and every one is invited. A demonstrator is in attendance and exhibitors' literature is distributed as a service to visitors. There is no charge for space and the enterprise is entirely noncommercial. The museum is conducted in cooperation with the New York State Department of Labor, but functions as a national institution where employers from all sections of the country, and particularly smaller employers who are unable to engage professional safety engineers, may acquaint themselves with the best known means of safeguarding the life and health of their workers, not only through mechanical devices, but also through educational activities.

The museum really consists of two parts. In the first are shown resuscitation devices, first aid kits, protective clothing, goggles, masks of all kinds, fire extinguishers, photographs and charts. Hundreds of photographs are exhibited, giving details as to how safety, sanitation, and

This shows a view of the American Museum of Safety looking toward the entrance. All types of tested safety devices are on display here.

welfare are carried out in different industries. The illustrations really make a detailed account of the exhibits unnecessary. Manufacturers are solicited to send in their safety devices, and if approved by the engineers, who act in an advisory capacity, these devices are installed at the expense of the museum. The library only a block away, 141 East 29th St., has a highly specialized collection of books, pamphlets, reports, photographs and lantern slides, illustrating practical methods for conserving life and health. Upon request, special data on situations requiring investigation and research are secured. This service constitutes one of the privileges accorded members of the American Museum of Safety. Assistance not involving special research is given free of charge to all inquirers.

The machine room is the second part of the museum. It has a solid concrete floor so that there is no vibration. Here will be found lathes, both for wood and metal, grinding wheels, punch presses, circular saws, cross cut saws, sewing machine tables, laundry presses, a compressed air paint spray booth and a twelve foot elevator equipped with four types of safety doors.

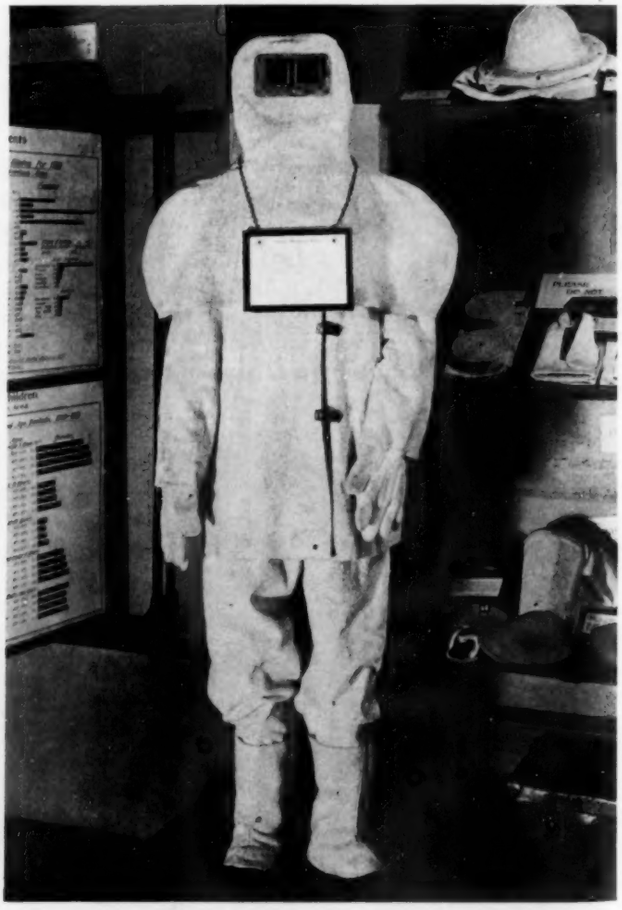
In establishing the museum in cooperation with the Department of Labor, the activities are not purely local. There are museum members in all parts of the country, and the museum committees are prepared to show any state how to establish a safety museum. The museum will award the Harriman Memorial Medal this year for the railroad having the least number of accidents.

A magazine, *Safety,* is published by the museum and this deals with all phases of safety, but contains no advertising.

During the World War great services were rendered the government by the American Museum of Safety. Its engineers worked for safety in navy yards and arsenals, where accidents were frequent and serious.

Briefly stated, the aims and objects of the American Museum of Safety are the prevention of accidents, the elimination or lessening of occupational diseases and the promotion of industrial and public welfare through education and cooperation. This museum is only a start, but it is a start in the right direction and will likely prove to be an incubator for forty-eight similar museums.

Protection from gases is of paramount importance in safety work. With this suit and air supplied from the blower in the trunk under the table a man can go into gas laden atmosphere and effect a rescue.



A complete asbestos suit like the one pictured above enables the wearer to enter a flaming room and make rescues that would be otherwise impossible.

Ridding the Household of Insect Pests

LOUIS GERSHENFELD

KEROSENE or coal oil, benzin, gasoline, carbon disulphid and carbon tetrachlorid, in the order named, are the most frequently used of the liquid insecticides. The last two are at times employed in fumigation by confining the vapor produced by their volatilization. Care must be taken that these liquids, with the exception of carbon tetrachlorid, are employed only in places in which they will not be a fire hazard.

Phenol, commonly known as carbolic acid, or still better, cresol, a liquid obtained in the destructive distillation of coal tar, can be added to the extent of from 1 to 5 per cent. This will make a more effective and useful solution. It should not be added if the coal tar odor is found objectionable. Some even advise adding from 10 to 15 per cent. of oil of turpentine to the coal oil or kerosene before adding the cresol. Oil of turpentine is not only an effective insecticide but it disguises somewhat the coal oil odor. The odor may be more readily eliminated by adding one or several of the volatile oils that will be mentioned later. The housewife has the choice of using the oil possessing an odor least objectionable to her.

A preparation made as directed here can be used for the eradication of any and all of the commonly observed household insect pests and their eggs.

Should Apply Liquids with Brush

Liquid insecticides should be used liberally. One should introduce them freely by painting with a brush or mopping with a cloth. If this can not be practiced, applications should be made by spraying or by squirting the material. No place is to be overlooked during the treatment. Frequent efforts at disinfestation are beneficial and essential. Application, therefore, should be repeated at intervals of four or five days or biweekly for at least three successive applications. This treatment will destroy all eggs that may have hatched during the intervening period.

The eggs of mosquitoes hatch only in the presence of standing water. The larvae or wrigglers that develop from the eggs are aquatic. They pierce the surface film of the water so as to draw in air, for though aquatic, the mosquito larvae are air breathers. Many ponds, swamps or stagnant pools can not be conveniently drained or filled in. By covering the surface of these stagnant pools with a thin film of coal oil or other suitable oil preparations, the air will be excluded. As there is little dissolved air in water, the mosquito larvae will die quickly from such treatment. The exact amount of kerosene or oil preparation to be employed is usually one fluid ounce for each fifteen square feet of water surface. This film should be replaced after the liquid evaporates.

Many insecticides on the market sold under various trademarks and fancy names are essentially nothing more than kerosene, to which has been added cresol or a closely related chemical. The coal oil odor is disguised by the addition of any one or a mixture of the following oils, which in most instances possess some insecticidal properties themselves: oil of mirbane, oil of sassafras, oil of eucalyptus, oil of camphor, oil of wintergreen, oil of cassia, oil of lavender and oil of pine. However, there is this to be said of these marketed products: The coal oil used is generally of a grade known as water white, it possesses a high flash point, and a more pleasant odor than the ordinary kerosene. It differs from the grade of kerosene bought at the corner grocery store, which is apt to become ignited at a low temperature and often leaves a stain, when applied to clothing. The water white grade generally is stainless, an effect especially to be desired if clothing or rugs are to be sprayed with a liquid insecticide. It is best to try the mixture on some inexpensive material or remnant before applying it to fine fabrics.

Strong solutions of mercuric chlorid (more often spoken of as corrosive sublimate or bichlorid of mercury) have been advocated and recommended. A saturated solution of bichlorid of mercury in denatured alcohol or, still better, in a well shaken mixture of one part water, one part denatured alcohol and three parts of oil of turpentine, will be found efficient in the destruction of insect pests, especially bedbugs. When coal oil has been objectionable, I have used the bichlorid of mercury solution effectively in ridding cellars, garages, and similar environments of fleas and their eggs by a thorough mopping of the floors and walls. The greatest care should be taken while using the solution, as it is poisonous.

Various powders, such as insect powder, have been macerated with coal oil and to the resulting mixture, after filtration, there has been

added one or more of the volatile oils to destroy the coal oil odor. There seems to be little added value to such preparations other than an increase in cost.

Instead of kerosene, water has been used to make a solution of bichlorid of mercury and carbolic acid. A mixture of soap and water has been used to dissolve cresol. These watery solutions, though efficient insecticides, are not as satisfactory as those possessing coal oil or a closely related volatile liquid.

Carbon disulphid and carbon tetrachlorid are at times employed as insecticides. The latter liquid is non-inflammable and on this account is employed in places in which an inflammable liquid can not be used. The vapors from these liquids are being employed by some to assist in the eradication of household pests.

How to Use Carbon Disulphid Fumes

Carbon disulphid fumes have been advocated as an efficient remedy for the destruction of moths, roaches and ants, especially in trunks, closets and small tightly constructed rooms and compartments. From eight to ten pounds of the liquid are required for each 1,000 cubic feet of space to be treated.

Most all gases or vapors employed as fumigants are lighter than air. It is, therefore, only necessary to see that the gas is generated so that it may rise. Carbon disulphid gas is heavier than air. This gas must be generated by placing the liquid at the top of the compartment or near the ceiling of a room, and then allowing the gas to escape slowly. It then falls to the bottom, thus mixing with the air.

Exposure should be for from six to twelve hours. A temperature of at least 60 F. is required to obtain efficient results. The warmer the environment to be treated, the more effective will be the gassing.

Carbon disulphid fumes are only valuable and applicable if the vapor can be confined. The gas is explosive, and every precaution should be taken to see that no fire is in or around the environment during the treatment. If a sufficient quantity of the gas is inhaled, various ill effects become apparent, such as suffocation or dizziness. The vapor also seems to have an effect on heart action, and individuals having heart defects are cautioned against using the gas or being present when it is employed for fumigation.

Carbon tetrachlorid fumes have been advocated as a substitute for the disulphid. Like the latter, the gas is generated by allowing the liquid carbon tetrachlorid to volatilize by being exposed in dishes at the top of the compartment. The gas is heavier than air, is neither inflammable nor explosive, and does not possess the irritating and poisonous properties characteristic of the fumes of carbon disulphid. It is, however, only about one half to one third as effective. One would have to use from twenty to thirty pounds of carbon tetrachlorid for each 1,000 cubic feet of space. Though effective, this would make such fumigation very expensive.

[*To be continued in November issue.*]

How I Use Hygeia in My Class Work

PRIZE LETTER CONTEST

LAST month the four prize winning letters in the contest among teachers on "How I Use HYGEIA in My Class Work" were published. In this issue appear the five letters awarded honorable mention.

Large and small city high schools, grade schools and country districts are represented in the letters published this month. The progressive teachers are not allowing their health instruction to stop in the schoolroom but are teaching health throughout their communities. How HYGEIA has aided them in this great purpose is told in the letters that follow in this and succeeding issues.

My High School Physiology Classes

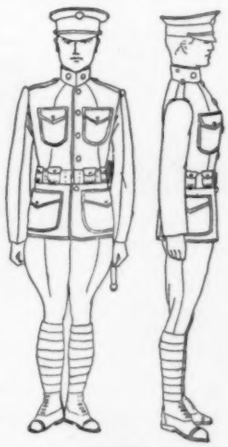
I HAVE used HYGEIA very profitably in my sophomore physiology classes for the past two years. We had only one copy a month for 100 pupils, so I could not assign a lesson from HYGEIA to the entire class as I do from a text, but I had individuals give oral reports to the class. First I had the brighter pupils report, later those who voluntered to answer a question taken from the magazine. Fortunately we had back copies for about two years, many of which had articles pertaining to the same subject.

It will be necessary to give an explanation of the procedure I followed in teaching various topics to make it clear to you how well HYGEIA helped us out. I never made an occasion to use HYGEIA; rather, the occasion arose and in HYGEIA we found our solution.

When starting the course we made a study of superstitions, mainly health superstitions. I believe that one of the biggest tasks a physiology teacher has is to teach a child just enough about his body to make it possible for him to discriminate between superstitions and truths. By consulting the questions and answers department in HYGEIA it was possible to explain many of the questions that arose. Let me illustrate.

It is a common belief that warts are caused by toads and can be removed by rubbing them with a potato and then throwing it away to rot. My pupils volunteered ten or fifteen somewhat similar cures. In the December, 1924, number of HYGEIA we found a question and answer on this subject from which we learned how warts are caused and the only safe and sure way of removing them.

Much p r o m p t i n g is done throughout the school year to help children form habits of sitting and standing correctly. After demonstrating head up, chin in, chest out and abdomen in position before the class and showing the correct sitting posture, I asked them to demonstrate good and poor posture before the class the next day. As a supplementary topic one pupil reported from the article in the August, 1924, number of HYGEIA on posture. The following day we had much fun proving that posture portrays character. It was surprising to see how well individuals were able to act as statesman, thief, "flunker," A 1 pupil, debutante with slump, and graceful lady.



The class studied posture pictures in HYGEIA.

In our study of the structure and function of the skin we found many references in HYGEIA. Enough of these were assigned to verify my teachings, namely, that pores are not for breathing, that the skin's main function is to regulate body temperature and that it serves as a protection by letting very few things enter the body through it. I always feel certain that HYGEIA will give just the explanation of the subject I want emphasized.

When studying hands and feet, one pupil read in the August, 1924, number an article on "Choosing the Correct Shoe" and several reported from the questions and answers section on the subject of nails.

A topic enjoyed by every one was "Fakes," or, as I like to put it, "false ads." HYGEIA has been rich in articles on this subject. We began our study of this topic after a girl in class brought one of Bernarr Macfadden's publications to me and asked me what I thought of the article on smallpox vaccination. I assigned to her the topic in the December, 1924, number of HYGEIA that gave a discussion of this very article. Then I assigned to others all the references I could find on fakes.

I had them bring ads they found in papers that they thought were false. After discussing these, using the knowledge we had gained from the previous reports and comparing them with ads found in HYGEIA, they made illustrated booklets on this subject. These books contained clippings and an explanation of what they thought was false about them.

When studying the ductless glands, we made an extensive study of goiter. I found it more desirable to read to them from the June, 1924, number as I lectured because I wanted to give emphasis to some portions, and some parts I deemed undesirable for discussion in mixed classes. Several other discussions found in the question and answer section gave me confidence in recommending iodized salt to those not having a goiter.

Just before studying the structure of teeth, I assigned HYGEIA's interesting article on this subject. This brought out the need of visiting the dentist twice a year. Each pupil was given a card that entitled him to free dental examination at any dentist's office in town. Our dentists were willing to cooperate with me in this respect.

Several lessons I emphasized by having the pupils make posters illustrating what they learned. Such topics as teeth, colds, posture, sleep and exercise were used. We were fortunate to have all the copies containing the health posters from the HYGEIA contest. I also had the issue that gave Mr. Lemos' lesson on the making of a good poster. The results from the assignment were very gratifying. The posters receiving the blue and red ribbons were well worth displaying in

the assembly room during our good health week at the end of the year.

In a very unexpected way I found HYGEIA a blessing in my work. In February one of my boys brought up the question of vivisection and asked my opinion of this practice. Fortunately I had just read the first Baynes' article on the antivivisectionists published in February, 1925. I gave my view, as any one would, after reading this article. The boy took the opposite view. I immediately assigned this topic for him to report on the following day. He did and did it well. Later I asked him to read the March discussion. At the close of the year he wrote on an examination question that one of the biggest things he had learned in the course was that vivisection is essential in medical progress.

In conclusion I want to say that the unconscious use I made of HYGEIA from having read and reread its pages was invaluable in making my class a success. I was filled with the teachings of HYGEIA and in all enthusiasm tried to transmit the truth as I knew it to my high school classes in physiology and hygiene.

HERTHA C. CROKER,
Valley Junction, Wis.

Health Teaching in 1,000 Homes

IN 1919 when we were asked to plan the health program for the Chaffey Union High School we consented, secure in the belief that some sort of an outline for a course of study might be obtained and that we could follow the plan of others with additions or subtractions as the occasion demanded.

Letters of inquiry and visits to other high schools disclosed the fact that many instructors were much interested in such a plan but each locality had obstacles that prevented the organization of such a department. We realized that with the splendid opportunity for service thus presented, it was up to us to outline our own course of study—and make good.

It was necessary also for us to plan this course so carefully that it might be standardized and put in the school curriculum as a required subject for which credit could be given. As a result of our investigations we found that hygiene instructors doing foundation work in organizing health programs in high schools have experienced difficulty in securing and outlining an instruction course that will cover the entire high school period, a course varied and diversified enough to hold the interest of the pupil without too much repetition.

Starting with one hour a week health instruction for freshmen girls we now have, in 1925, a full time health instruction which reached 588 high school and junior college girls, 100 part-time American and Mexican girls, 40 Mexican women and the same number of American women. We estimate that this school is reaching nearly 1,000 homes yearly and, in addition, a nurse has been secured by the community and school to teach prenatal care, infant and child hygiene in the homes in the outlying districts, in order to round out the development of the fine piece of work that is be ng done by our part-time department.

For the past two years we have used HYGEIA for reference and for subjects for classwork. Three copies are received in the high school: one for the library and two in the hygiene department. Our hygiene course now covers the entire four years of high school and one year in junior college.

In the night classes held for women in the community much of the valuable information contained in HYGEIA is given them. Sixty young women in the junior college hygiene classes use the magazine for references for their papers on various health subjects. One young woman last year made an excellent report on rheumatism from the information contained in HYGEIA. The second hour was given over to the discussion of lepers, and a report of the prize letters on "The Biggest Health Fraud I Ever Fell For." I could mention many other papers so written and discussed.

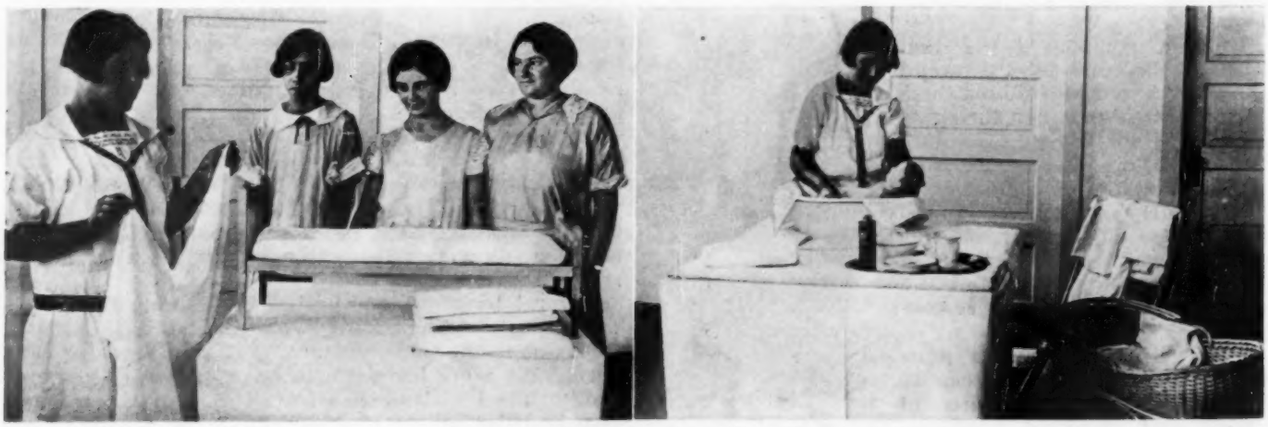
The information regarding plunges has been especially interesting because we have one in our school and the rules and suggestions have been most valuable. Our senior girls taking first aid and qualifying for Red Cross certificates found the article on "The Resuscitation of the Drowning" particularly helpful as it supplemented the information given in the textbook.

Our freshmen girls kept notebooks. Health talks were given built around five laws of health: (1) posture, (2) food, air and water, (3) exercise, (4) cleanliness, (5) rest. Prevention of disease was emphasized always.

The sophomores received instruction in anatomy and physiology and they also kept notebooks. Food and weight charts were made.

The foundation was thus well laid for the home nursing instruction given them in the junior year. The equipment for the demonstration work was a gift from the local Red Cross Chapter of Ontario and Upland and consists of four hospital beds and all other appliances necessary in the home care of the sick. These young women received "Home Hygiene and Care of the Sick" certificates from the American Red Cross.

Hygiene is a required subject given by a full-time instructor who is a registered nurse holding a teacher's certificate in secondary instruction. In organizing this department we could find very few books on which to base our instruction. A large sum of money has been



The Mexican girl, on the left, is demonstrating the making of a hospital bed. The girl on the right is giving a classroom demonstration on baby bathing. Both pictures were taken at the Chaffey Union High School in the health instruction course.

spent each year for the latest books on hygiene and health activities, and there were many duplications of subject matter. HYGEIA has been the one publication received that has given us the most valuable and most up-to-date information on sanitation, preventive methods and health subjects in a simple, yet complete, manner easily understood by our high school girls.

Sixteen members of the present graduating class are entering schools of nursing, making a total of fifty from our school now in training. Our principal remarked during the year that we would not live to see the fruits of our instruction but health records in the next generation would prove its value. With the compulsory education laws now in force throughout the country broadened to include a definite and practical health program in each school, we have the means of reaching and solving the health problems now confronting us.

HYGEIA is rendering a wonderful service to health instructors all over the country. Cabot is sounding the key note of health teaching when he says, "When we try to serve the world or understand it, we touch that which is divine. We get our dignity, our courage, our joy in work because of the greatness of the far off end always in sight, always attainable, never attained. Service is one of the ways by which we may get a purchase on the whole universe. If we find the job where we can be of use we are hitching to the star of the world and move with it."

HARRIET L. FLEMING, R.N.,
Health Instructor, Chaffey Union High School,
Ontario, Calif.

How 300 Biology Students Use Hygeia

OUR attention was first called to HYGEIA by a prominent physician who described it as a magazine of hygiene written in a popular style but censored by the American Medical Association and hence very authentic. We have found it a source of invaluable help and interest in our biology classes during the past year and the possibilities of its greater use in the future are a part of our present study.

We have mounted on stiff paper the many posters in HYGEIA, placing them on the large biology bulletin board in the main corridor, that instruction and entertainment may be given all of our 800 high school students, instead of limiting it to the 300 biology students. We find that if we correlate the posters with the lesson topics that the mental impression of both poster and lesson is strongest, and hence we have them assorted under different headings. For example, all posters on oral hygiene are used with the study of the teeth, all posters on fresh air with the subject of respiration and ventilation, all posters on health foods are displayed when we study nutrients and diets.

Our own students, inspired by these posters or by some phrase in HYGEIA, have made, we think, quite wonderfully unique and attractive posters. For instance, in the January, 1925, number of HYGEIA is Ruth Strang's story, "One Night in Jinnie's Kitchen," with the phrase, "Orange and Tomato, the Vitamin Twins." Two of our biology boys took that phrase as a subject of a poster and worked out the idea with a humorous touch the last period one Friday afternoon when they were too tired to do other work. That poster will be used for several years to teach many children the word vitamin and some facts about it. We find that posters make a lasting impression. The students seem never to tire of them.

Frances Sealblom

Likewise we find the stories and articles of information more useful when classified, and a card index grouping similar topics is easy to keep. For instance, on our card, "Skin and Its Appendages," we have:

Jan., 1925, Chilblains and Frost-Bite, page 52.
Feb., 1925, What Does One Do for Pimples? page 90.
March, 1925, The Sanitary Manicure, page 153.
April, 1925, Proper Care of the Hair, page 226.
May, 1925, Getting Rid of Superfluous Hair, page 285.

The girls, of course, and rightly so, are interested in the healthful beauty articles and we have a card in our index devoted to that subject. Girls of high school age are bound to seek information on this subject, and it is worth while that they be introduced to a reliable guide in the hygiene of beauty. After the card index is started, it can profitably be made complete with each monthly arrival of the magazine by some of the more careful students. Such an index is useful to the teacher herself in her assignment of topics to pupils.

We are much interested in the advertisements in HYGEIA. We gave the students the address for the Bauer and Black's "First Aid Booklet and Bathroom Chart." Several sent for them and were delighted.

Every department in our high school gives one annual entertainment in the auditorium for the entire student body. Of course, each department tries to present some part of its work in a clever, interesting way, or as the students say "to make it snappy." In this year's biology program, we made use of Mark Twain on "Man" as given in HYGEIA, February, 1925.

We have talked over a little what we may do for next year and some of the boys who have had manual training think they can construct the "Health and Unhealth Houses" as presented in HYGEIA, February, 1925. We have thought of a few humorous variations from your description. Then a girl will use some parts of the story of the Health and Unhealth Houses by way of explanation.

Another girl is working this summer on two large posters to use on the stage, one by the Health House and the other one by the Unhealth House. These posters are suggested by the story, "One Night in Jinnie's Kitchen" in January, 1925. Several pupils in simple costumes to suggest milk, egg, etc., will dramatize that story. With the poster work, the building of the houses, the making of costumes, the planning and dramatizing, a large number of students will have a part on the program. They have a lot of fun and take much pride in trying to originate clever ideas, though we insist that the basis of it all must be instructive. They think the "Jinnie" story will work out very cleverly.

They also like "The Door in the Apple Tree" in the April, 1925, number; and some of the poems, such as "In the Land of Pyramids," in January, 1925; "The Road to Nome," in April, 1925, and "In Old Peking," in June, 1925.

Physical training is compulsory in the New York state schools unless the pupil is excused by a physician. We have in our high school about 150 students with such excuses, and the biology department has been asked to work out this summer a four years' hygiene course for pupils who seem unable to take the drills. We believe that HYGEIA will help us out considerably to make such a course attractive as well as beneficial to these

children who are so handicapped that physical exercise is impossible.

Perhaps it may be wiser the first two years to use the topic system referring students to HYGEIA through the card index, but during the junior and senior years I think the magazine can well be placed in the students' hands, and they will thereby become fond of a good, wholesome health paper, fascinating and valuable for their entire household. We hope that some may become permanent subscribers. I am wondering if the publishers of HYGEIA might not make some special club rates to high school classes of this sort. I think in the senior year HYGEIA might become our textbook, practically, for such a course as we wish.

We have thought that we might call the attention of the community to HYGEIA by offering an annual subscription to one or more pupils for excellence of work in biology or in hygiene.

The magazine for the present is kept in our biology room and the index and the magazines may be used there. We do have an excellent school library, however, and it is our hope that we may have the magazines bound into annual volumes that they may be of more service to the entire school. The annual index that you give in the December number would, in such a volume, be very helpful. Desire for health is innate and a correct guide is therefore so valuable.

In our one year's use of HYGEIA, the students have been fascinated with the posters, the poems, the clever stories, and have been taught confidence in its more serious information. The present day high school pupil seems to require that knowledge be in the center of a package cleverly wrapped up, and HYGEIA, unique in picture and expression, seems to accomplish just that.

MILDRED UTLEY VICKERY,
Teacher of Biology,
Gloversville High School,
Gloversville, N. Y.

The Health Habits Club

"HYGEIA'S here, hooray! hooray! Now 'Health Habit-ers' will be busy and gay!"

Thus chanted 15 year old Mary Cary, chief of staff, as she danced into my schoolroom one morning, waving a magazine high above her head.

"Oh, Miss Fonda, here's the life-saver," she announced happily. "It surely is that for me, as well as for the home and community. For every member of the staff has been camping on my trail all week, they are so anxious to see if there is something in HYGEIA this month that they can use. I'd have had nervous prostration if it hadn't come soon! Shall I call a meeting for this noon?"

I was as glad to see HYGEIA as was Mary Cary, and as anxious as was the staff of the noontime meeting always held soon after the arrival of the "life-saver." It was the signal for the school as well as for my room to hum with activity.

As Mary Cary, radiating health, happiness and enthusiasm, danced out, a visitor, that bête noir of a busy teacher, plied me with questions. I answered two, asked one, and proffered an invitation.

"That 'bright interesting girl' is Mary Cary, chief of staff of the 'Health Habits Club.'"

"Yes, HYGEIA is a magazine. Is it possible that you, a health education teacher, do not know it?"

"Well, well! We shall be pleased to have you attend our meeting. That will tell you more than I possibly can of the connection between Mary Cary, the staff, HYGEIA, and our health education program."

The visitor was at the noon meeting. So were Mary Cary and her associates, seven girls and seven boys, each representing some subject, activity or interest of the school.

During the morning I had glanced over the contents of HYGEIA and dissected it. All articles and materials suitable for school and home use by boys and girls were labeled and spread out on a long table ready for inspection and discussion. Around this table gathered the staff, absorbed and intent. Some quickly found what they could use; for others a patient search was necessary. This meeting was but the beginning.

The English representative seized delightedly on a health story and a poem. "I am so glad when there is a story," she sighed contentedly. "It is so useful for oral English. Every one loves a story, and no one can possibly forget what she learns about health when it is part of a story, or a poem either. It's such fun to call ourselves 'Fresh Air Elizabeths,' and our throats our little 'red lanes,' and things like that. It's fun and it gives us a way of reminding each other about health habits without preaching."

Then her wise little head, beside that of the assembly representative's, bent over the page, engrossed in its contents. Stories and poems were in demand for the weekly assembly programs as well as for classrooms, and the health stories were a real boon, combining, as they did, instruction and entertainment. Later, these two representatives would find in HYGEIA more health material to be written into themes, dialogues and playlets, which also might find a place on class or assembly programs. HYGEIA proved a mine of riches for them.

One member of the staff was humming softly. It was the music representative, enchanted to find a poem that could be sung to a familiar tune. By the next week, not one class, but half the school, would be singing health in the poem she had found and turned to such pleasant use.

Posters to copy, ideas for original creations, and fascinating little cartoons occupied the attention of the poster and art representatives. With the aid of their busy hands and those of the students in the art classes, health would soon send out its colorful messages from blackboards, bulletin boards, and advantageous positions in the corridors. Chalk talks, too, would do their bit in class and assembly meetings.

Delighted chuckles from the boy in search of hints for exercises and games drew the visitor to his side. Some splendid exercises were not only described but most amusingly illustrated by simple line cartoons.

"I'll have Phil copy these drawings on the board while I describe the exercises," he said. "Won't it be jolly fun doing them?" (I was afraid it would be a riot.) "I wonder if there are any games," he continued, "every one liked the one in last month's number."

The bulletin board representative was finding, as usual, a wealth of material. He reveled in the pictures in "Health News and Views" and he extracted numberless bits of valuable information from different articles. He even found treasure in the advertisements and book reviews. A new display on his bulletin board brought pupils clustering about it like flies around a dish of sugar, learning health lessons without realizing it. Then there was the slogan hunter. His

Catherine Funk

alert eyes scanned every article, every heading, every picture, every advertisement. Day after day, health spoke to us from his beautifully lettered cards, placed in conspicuous places on the walls. His slogans were tossed back and forth from one pair of lips to another, becoming as familiar as every day speech and as unforgetable; teaching health ideals, inspiring health thought, suggesting health habits.

The domestic science representative seized with whoops of joy some menus for camp cookery. They were just what she wanted. The Girl Scouts were going to a camp and were anxious to know what kind of food they needed.

We told her that she not only mothered the whole class, but their families as well. Whatever she could learn about diet for babies, for children, for adults, whatever she could learn about the buying, the cooking, the care of foods, or their values was quickly at the service of her classmates. Her interest in the lunches of those who ate at school and her approval or disapproval of them was so respected that a marked change for the better became apparent in many lunch boxes and, indeed, in their owners' afternoon dispositions and classwork.

The household arts representative often mourned because she did not find so much material for her department in HYGEIA as she could wish, but what she did find was used wisely and well.

The representative called the home helper is one of our most valued aids in spreading the health education of the school throughout the community. Many of the parents need and want help in their home and family problems and for many the school is the chief, if not the only, source of information. Childhood is not only the golden period in which to teach health, it is also the golden period in which to live it, and so through big brother and sister, the school reaches out to lay the foundations of health habits among the little ones of the home.

Stories and poems to tell to the children at home, lists of simple exercises to teach them, amusing pictures each with its lesson, for them to copy; suggestive remarks such as, "Your teeth are as white as the milk you drink," "You have pink roses in your cheeks because you take your nap out of doors," were some of the helps found in HYGEIA. Hints on food and clothing, cleanliness and sanitation also reach the home.

We are fortunate in living in a city as progressive in its health education program as is Rochester, but I think any teacher could follow our plan with the aid of HYGEIA. I should not have attempted it without the magazine's help. Finding correct and inspirational health material would have been an impossible task.

I know that because of the help HYGEIA has given, my pupils are not simply learning health facts, but are establishing health habits. They are not simply reaching out to get help for themselves, but are serving the community. What they do is the outcome of a genuine interest in health, which, I hope and trust, will endure throughout their lifetime.

ELEANOR M. FONDA,
245 Lark Street,
Rochester, N. Y.

Serving Parents and Children in the Country

I RECEIVE HYGEIA at my school each month and I must say we look forward eagerly for its arrival, for it has not only widened my vision but also that of my pupils and the community at large.

As a teacher in a large country district I have the opportunity of observing the urgent need of instructing the people in the proper care of God's greatest gift to man—health.

When I first began my little health talks and lessons in school the children became much interested. The parents began to drop in for a friendly chat and usually the first thing they had to talk about was about the wonderful little lessons I was giving their children from HYGEIA. Then they would ask me if they might not come some days to listen to the talks on health from HYGEIA. Of course I was delighted to learn that my work was not in vain and I gladly invited them to hear our separate lesson on health work. This work has grown wonderfully in our community, and it has spread to other communities in a way I will soon explain.

HYGEIA we soon learned is a splendid magazine and I do not believe any improvement could be made.

We hang all the pictures of the little children that are usually found in the front of the magazine on the wall in the little people's section, and I tell my little ones how it is that these children that are advertised by their loving friends come to have such beautiful, bright eyes, sweet smiles and strong, sturdy bodies. I tell them they too may develop into fine boys and girls through the proper use of food, sleep and exercise.

The posters I have used in health meetings with great success. The children make their own copies from what is found in HYGEIA. Every parent, child and visitor spends much time in the part of the schoolroom in which the posters are hung. These posters have brought new facts before our people and have awakened them to a sense of their responsibility. I have given some of these posters to neighboring schools and the wonderful good that they are doing already can be seen.

So that you may know how much the posters have done for us I will recite one little incident that took place recently. In HYGEIA we found a picture of a beautiful little girl, captioned "Drink Milk." A little girl in our room expressed the wish that she might be beautiful and chubby as this child, so I explained to her if she would drink lots of milk and let coffee alone she would soon get this way.

"But," she said, "our calves have to have all the milk."

A few mornings later when her parents were visiting our school, I gave a talk on "What Our Children Should Drink," and told of what a wonderful food milk is to the human body, and how little children should not be denied it at any cost.

As a result every child began to drink milk. They drink it not only at home but they bring it to school in bottles. Our community now realizes that the children as well as the live stock need milk.

We follow the letters on advice in HYGEIA. Copies are lent to residents in our district. They are delighted with the magazine. I can safely say that it has awakened me to true facts in life that I had never known before, and the people in my district tell me the wonderful good it has done them. Mothers have learned better care for their babies and a better understanding of child problems.

We have given several of the health plays published in HYGEIA before the public. Those who attend have told me that they have learned many new things.

In our lessons from HYGEIA I lay special stress on the teeth and their care. I have taught my people through your magazine that teeth, if not properly cared for, destroy beauty and health, that thousands are killed every year by their own teeth, and that millions suffer from rheumatism and other troubles because diseased teeth poison them. Good teeth, I have told them, prolong life and give happiness.

Our lessons on true health ideals have been so simple that they mean much to even the youngest child.

In short, HYGEIA is a much loved and appreciated magazine in our school, neighborhood and surrounding district because it has awakened us to a sense of our full duty and responsibility to ourselves and children.

BERTHA JESKE,
York, Nebraska.

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association

535 North Dearborn Street, Chicago

Plain Facts about Health and Disease

HEALTH NEWS OF THE MONTH

DURING hot weather the inventive brains of the research workers and the shrewd schemes of the medical exploiter languish. Thus, August is likely to be quiet medically, at least in the daily press. But the periodicals continue to publish material along health lines.

"Why Exercise?"

In *Liberty* for August 15, George Jean Nathan, critic and maker of humorous phrases, questions the craze for exercise that pervades our world today. Mr. Nathan finds that 38 of his college friends were athletes and that 18 cared nothing for exercise. Of the 38, 14 died from natural causes between the ages of 25 and 42, and of the remaining 24 he says: "Three are invalids, 6 have periodically suffered nervous breakdowns, and one has to limit himself to five hours of work a day because of a weakened heart." On the other hand, Mr. Nathan finds that 2 of the 18 who did not believe in exercise were killed in the war, that 2 died from natural causes, and that the rest are today thoroughly healthy. If Mr. Nathan were a medical statistician he would not attach much importance to his personally observed statistics.

After Mr. Nathan's article appeared, numerous readers wrote to HYGEIA asking that he be devastated with a blast from the scientific cannon. Fortunately, the blast is not altogether warranted. His statement that "athletics are for athletes" is no doubt sound. Authorities are inclined to agree with him that the great work of the world is not done by men with biceps as large as Smithfield hams or by proficient pole vaulters and water-polo players. Mr. Nathan is not so foolish as to condemn walking as a regular exercise for the man who leads a sedentary, literary or business life. He does condemn all of the physical culture propaganda and all the systems that call for vast amounts of time to be spent in giving the muscles a workout. HYGEIA favors exercise carefully chosen and properly limited as an accessory to good health. It does not favor comprehensive systems of physical culture or the undue exaltation of muscle over brain.

Mr. Nathan is essentially a humorist and as a prescriber of health advice is not to be taken too seriously, but there is sufficient of truth in the sarcasm that dominates his literary effort to warrant thoughtful consideration.

Dr. Evans and Arrowsmith

Dr. William A. Evans, writer of syndicated health columns for the Chicago *Tribune*, has enjoyed Sinclair Lewis' latest novel, *Arrowsmith*, but criticizes its medical accuracy. It appears that Dr. Arrowsmith should have done a tracheotomy on the 8 year old girl with laryngeal diphtheria, instead of dashing twenty-four miles for antitoxin. Dr. Evans feels that Arrowsmith should not have given a hypodermic injection of strychnin to the suffocated firemen, but that he should have administered inhalations of a mixture of oxygen and carbonic acid. He also disagrees seriously with Arrowsmith's conduct of the preventive measures in connection with the finding of bacteria in the throat of a dairy employee and in the udders of the cows used by the dairy; finally, he seems to think that the description of the plague infected rats is fantastic.

After all, *Arrowsmith* is a novel and not a medical textbook. Possibly tracheotomy was a correct procedure in the case of the girl dying with laryngeal diphtheria, but throughout this novel Martin Arrowsmith is portrayed as an idealistic, visionary and somewhat eccentric young man. Such a young man would inevitably choose the dramatic and perhaps less useful procedure. Martin Arrowsmith might also have attempted intubation in the case of the child strangling with diphtheria, and he might, like one of Checkhov's heroes, attempted to suck the membrane from the throat. What he actually did was thoroughly consistent with his character.

The method of treatment for the suffocated firemen was good medical practice in the day

when Martin Arrowsmith presumably practiced according to the chronology of the book. The more modern method suggested by Dr. Evans is actually just coming into use. If Arrowsmith had attempted it, he would have been at least eight or nine years ahead of his time.

The dairy incident and the dramatic method of attempting the control of plague, referred to by Dr. Evans, are both consistent with Martin Arrowsmith's character.

Finally, plague infected rats about to die with an overdose of plague bacterial poison may die in almost any manner that the author chooses to ascribe to them. It is quite likely that "they danced comically before they died"; also "springing up as though they were trying to fly and straightway falling back dead." Just as human beings die in all sorts of queer and unusual manners, so also rats, facing death, may yield to unusual conduct.

The Death of Man

Charles Richet, famous French investigator of immunity in the human body, has just published a book entitled "Idiot Man, or the Fallacies of Mankind." He finds man's greatest weakness the manner in which he approaches death. "Man," he says, "cannot boast of his intelligence until he knows how to contrive a serene death. I should like dying man, lying on his bed, his pain soothed by narcotics, to talk smilingly, and without bitterness, of his approaching end; and to be able to see the emotions of those around him with a certain tranquillity . . . The beginning of human wisdom, of that wisdom which will allow us to call man Homo sapiens, rather than Homo stultus, will be the power of looking death in the face, calmly and unflinchingly."

Nose Diving for Deafness

Some time during the World War a man suffering with hysterical deafness went up in an airplane, received the shock of his life, and came down quite able to hear. The result was duly acclaimed by the press. During the same war a story was told of a British private who suffered unduly with the hiccups. He stood in his trench with shells bursting all about him and said to his buddy: "Scare me, Alf, Hi've got the 'iccups."

Physicians have long known of cases of loss of voice, loss of hearing, loss of sight, loss of motion of the limbs, resulting wholly from mental unwillingness to have the organs perform their usual functions. Such patients are frequently relieved of their disbelief by suggestions accompanied by some powerful stimulus. To this category no doubt, at least in the present state of our scientific knowledge, belong the cases of deafness that have been relieved by airplane flights. Last week one C. E. Lane of Indianapolis, aged 68, as related in the Indianapolis *Times*, dropped 15,000 feet in, not from, an airplane, in an attempt to cure his deafness. He thinks the experience helped the noises in his head. A little girl, deaf from birth, from a type of nerve affection that physicians know is incurable, tried the same experience and with no success. A little boy in Ohio went up and when the airplane fell was relieved simultaneously of both his life and his deafness. As the *Times* puts it: "A drop in an airplane that failed to straighten out after a nose dive would end all of the occupant's ills and worries. It would cure deafness, ingrowing nails, dementia praecox, and would convert the patient into hamburger steak." As a scientific physician would put the matter: "Nose diving for deafness is the apotheosis of empiricism."

A Chemical Test for Sex

Workers in the Department of Genetics of the Carnegie Institution of Washington have been experimenting with a chemical test originally discovered in Russia, and believe the method will show whether specimens of animal blood or plant juices come from male or female sources. The tests have been made on mice, sheep, pigeons, fruit-flies, sea-weed, willows, poplars, hemp, begonia and other plants. It was thought at first that the green-coloring matter of plants carried the elements responsible for giving the reaction, but this has been disproved. Here, obviously, is a method of great importance to the student of body reactions and particularly to the medico-legal experts.

M. F.

LOWERING THE BLOOD PRESSURE

ONE of the most common of all of the diseases of modern life is high blood pressure, or hypertension. It has been estimated that from 26 to 30 per cent. of persons suffer from disturbances of the blood pressure after passing the age of twenty-seven years. Thus far the treatment of this condition has been largely regulation of the physical habits, avoiding particularly physical and mental overstrain, dissipation, lowering the total amount of food intake, especially of protein substances, and avoiding substances such as alcohol and tobacco.

Physicians have known of numerous drug preparations that lower the blood pressure, but

it is established that the effects of such drugs are not permanent, since they do not relieve the underlying conditions which produce the increase in pressure. For some time it has been believed that the increase was due to certain chemical substances passed into the blood through the process of digestion. Conversely, it has been believed that high blood pressure may result from the absence of certain substances from the circulation due to deficient functioning of certain organs. In this connection, attention is called to research investigations which now appear to be culminating in the possible production of a substance that will be of benefit in the treatment of this disease.

Glands within the body, such as the pancreas, the adrenal, the pituitary, the thyroid and the parathyroid, have yielded substances of immense importance to the scientific practice of medicine. Indeed, it seems likely that many diseases of unknown causation will be controlled in the future through the use of such products. In January, 1923, Dr. W. J. MacDonald of Canada began research to discover what effects extracts of liver might have on the blood and on the body in general. As far back as 1915, however, investigators had found that extracts of the liver and of other internal gland tissues would reduce the blood pressure in experimental animals. This preliminary work was not sufficiently encouraging to warrant application of the method to the human being.

As Dr. MacDonald proceeded with his investigations, he enlisted the aid of the chemists and physiologists who had helped Banting with the isolation of insulin. Finally, a substance was obtained which seemed to be of reasonable purity; and after thorough testing of the substance on animals, it was determined to try its effects on human beings. Twenty-five persons were given the remedy and experienced no disagreeable symptoms, most of them reporting that they had apparent relief. Some of the patients had severe reactions to the injection of the remedy which closely resembled the reactions when foreign protein substances are injected into the body.

At the same time Dr. Halph H. Major of the University of Kansas School of Medicine was experimenting along similar lines and was securing similar results. Indeed, when one investigates the entire subject, he finds that the observations which resulted in the establishment of this conception, as was the case also with insulin, were the culmination of a long succession of experiments made by different investigators in different parts of the world. In commenting on these discoveries a few months ago, *The Journal of the American Medical Association* said: "It is clear that the liver extracts do have a definite effect in lowering blood pressure. Their clinical value will depend not only on the securing of a stable and uniform extract, but also on the permanence of the fall in pressure and on its relation to other pathologic changes existing in the body."

Now another group of investigators, working also in Canada, has been able to purify the substance taken from the liver and to determine to a certain extent its chemical nature. In other words, the first step in the production of a useful remedy for a most intractable condition appears to have been made. It now remains for carefully controlled studies in scientific hospitals and research institutions to determine the exact worth of the standardized remedy. If extensive investigations continue with the same impetus and success as have marked the work thus far, it seems reasonable to expect that a valuable aid to the physician in the control of high blood pressure is near at hand. M. F.

DANGERS TO RADIUM WORKERS

NOT many years ago there appeared on the market for the first time watches with dials that could be seen by night. Because of their usefulness, they received immediate popularity and, indeed, served conspicuously under war conditions.

In 1924, physicians in the Harvard School of Public Health, Boston, were asked to investigate certain cases of an unusual condition that had occurred in girls and women employed in the factories making such watches. In the cases of several of these girls the tissues of the jaw had begun to degenerate, and the course of the condition was so severe that several of the girls died, regardless of the best medical attention that could be promptly given to them. It was found that these degenerations, instead of remaining localized and healing as do ordinary infections of the jaw, proceeded to the point where the bone rotted away constantly, and, indeed, resembled nothing so much as a familiar condition suffered many years ago by workers in the match industry, who were constantly exposed to phosphorus.

When investigators began their study they found that the girls charged with painting the dials with luminous paint used a solution containing zinc sulphid with small traces of copper and radium bromid. The paint is applied with a fine brush, and it was the universal practice

among the girls to point their brushes by putting them in their mouths. It was not conceivable that the small amounts of copper had any relation to the disease, and the investigators were able to eliminate zinc as a source of the disturbance, particularly since recent investigations of the zinc industry had not revealed any similar disturbance among workers exposed to large amounts of this metal. Zinc workers do, however, suffer with other industrial disturbances.

The effects of radium on animals and on men have been studied by many physicians. The important symptoms of overexposure to this substance are disturbances of the male and female sex organs, and changes in the skin and in the blood. These conditions occur in persons exposed to the radium externally, but not in such a way as to have any of the radium itself in their bodies. Physicians who have exposed the tissues to radium or to X-rays have found that these things have a definite effect on bone tissue. Exposure to X-rays will disturb the growth of the bone, and if sufficiently penetrating will delay or prevent the uniting of parts of a fractured bone by interfering with the formation of new bone substance. It was found also that there were records of destruction of the tissues of the jaw by radium used to attack cancer of the tongue. It, therefore, appeared to be definitely established that the only constituent of the luminous paint which might do the harm was the radium.

In pursuing their inquiry, the investigators made studies with photographic plates of the amount of zinc sulphid dust containing radium which was present in the rooms of the watch manufacturing plant. It was found that the hair, the skin of the faces, hands, arms and necks, dresses, underclothing and even the corsets of the dial painters contained luminous material. One of the girls showed luminous spots on the legs and thighs, and the back of another girl was luminous almost to the waist. In other words, a sufficient amount of radium-containing dust was loose so that at no time was the skin of the girls free from the radium containing material. As might be expected, the constant exposure to radium had definite effects on the persons working in the rooms.

Twenty-two were examined and the blood of none of them was normal. Indeed, many showed the characteristics of exposure to radium or X-rays in excessive amounts. Plans were developed by the investigators for protecting the workers in these industries from this unusual industrial hazard.

Hereafter, the radium containing material will be mixed and manipulated under chemical hoods by operators who wear gloves, and the process will take place in a room entirely separate from any workrooms. The workers will wear high-necked, long-sleeved work aprons which will be washed weekly. They will be required to wear thin rubber gloves and facilities will be provided for thorough washing of the hands at various times during the day. Workers will be warned particularly against pointing the brushes by putting them in the mouth. Finally, all workers will be regularly examined, including examination of the blood to show whether or not they are being affected by the radium and enforced vacations will be given to those who show changes from the normal.

M. F.

DIAGNOSIS FROM HANDWRITING

THE study of handwriting has always had a particular appeal both for the scientist and the layman. Handwriting is individual, and it has long been the belief that it is possible to read character from the peculiar strokes that human beings make in conveying their views with pen and ink or pencil. The attempt to read character from the handwriting is so inexact a method as to have little, if any, scientific value. It is perhaps just as inexact a science as the attempt to read character from the features or from personal appearance generally. There are so many exceptions to the standards to be taken into consideration that even expert observers find that the methods fail by the exceptions alone.

The apotheosis of folly in connection with diagnosis from handwriting was the attempt of Albert Abrams, founder of the electronic method, to diagnose the diseases from which famous persons in the past may have suffered by placing their signatures in his complicated machine.

Of quite a different order are the studies recently made by Charles L. Dana of New York of the handwriting in nervous diseases. For some fifteen years he made patients suffering from such nervous diseases as paralysis agitans, or shaking palsy; writer's cramp, chronic alcoholism, general paralysis, locomotor ataxia, epilepsy, senile deterioration, and other forms of tremor, write their signatures. Also, for purposes of comparison, he had them write the unfamiliar name, "William Shakespeare," and sometimes a long word like "Constantinople." It happened that he had also available facsimiles of six signatures of William Shakespeare, which

are definitely known to be the authentic signatures of the great writer himself. These are in a shaky handwriting showing much unevenness.

Dr. Dana collected and examined in all several hundred signatures of patients with nervous diseases. He concluded from his study that there are few nervous diseases or conditions that can be diagnosed by the handwriting alone. However, in some instances the disturbance is so definite as to afford ready aid in recognition of disease. For instance, patients with paralysis agitans or shaking palsy or with certain types of epidemic encephalitis (inflammation of the brain), have tremors which show themselves definitely in the handwriting. The signature shows tremulousness, lack of terminal finish, shaded or heavy lettering and progressive diminution in the size of the letters. Persons with general paralysis write a signature showing tremor, irregular level, blots, omissions of letters, erasures and similar unevenness.

Obviously such a signature compared with the patient's previous signature affords definite indication of change. Patients with general paralysis show extreme self-confidence, and as might be expected there is no confusion in the terminal letters of their signatures, which are usually finished up well. Persons with locomotor ataxia, involving the arms, write a signature which is formless and confused. In cases of epilepsy, Dr. Dana found that the patient began his signature, hesitated and then began again, showing evidence of a brief attack of epileptic condition during the period.

His comparison of the signatures of William Shakespeare with those of the patients with various nervous diseases caused him to be convinced that Shakespeare suffered with no disease of this kind, even late in his life. However, Shakespeare died at the age of 52 years, and it seems reasonable to believe that a man who died at this age and had some trouble with handwriting suffered probably with a disturbance of the blood supply to the brain, such as is associated with hardening of the vessels or disturbance of the regular circulation. M. F.

OBSERVE GOLDEN RULE SUNDAY

MORE than 100,000 little children orphaned as a result of the late World War and the Smyrna disaster have been saved from death by the Near East Relief; approximately 40,000 of them are the direct beneficiaries of Golden Rule Sunday observance.

Here is what President Coolidge says about the work:

THE WHITE HOUSE,
WASHINGTON, D. C.

June 22, 1925

Gentlemen:

The reports of the observance of International Golden Rule Sunday last year in fifty countries, and its far-reaching results in the training of orphans in the Near East have been of great interest to me. This expression of brotherhood inevitably has a beneficial influence upon those who give as well as those who receive.

As practical help is the best expression of friendship, I feel that the aid which we may give out of our prosperity to those impoverished by war may be of the utmost value in the promotion of international good will. The consistent observance of Golden Rule Sunday cannot but help to bring about the application of the Golden Rule itself to the misunderstandings of nations and of individuals.

I earnestly hope that the voluntary observance of this day may become increasingly prevalent in the homes of America and throughout the world.

Very truly yours,

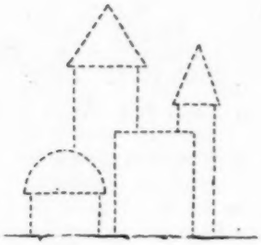
(Signed) Calvin Coolidge.

The Near East Relief asks cooperation in making possible the world-wide observance of International Golden Rule Sunday on December 6. The observance of this day means continued aid for these little wards of America. It means also a further step in the direction of international friendship and world peace. J. P.

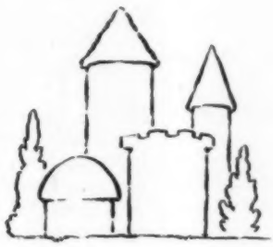
A Message from Healthy Land

BY JOHN T. LEMOS

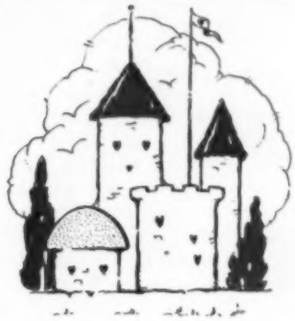
One of the easiest ways to be happy is to make some one else happy. Just try it this year, and see. The Little Man with the Acorn hat from Healthy Land, sends you a farewell message this month, and some pictures for you to draw.



In Healthy Land,
That sunny clime,
They're always having
Some good time.



And they've found out
That, if you try
To do some good
As days go by,



That you will always
Happy be,
And go through life
Right merrily.

Be good to pets,
Be kind to friends,
And, if you have
Some wealth to spend,

Then share it with
Some girl or boy
Who's poor or sick,
To bring them joy.

And don't forget
The Little Man
Who brought you news
From Healthy Land,

Because the little folks
Who do
The pleasant things
That he told you

Will grow to be
Both well and strong
And happy as the
Day is long.

So good plain food,
Milk every day,
Baths and good sleep,
Will keep you gay

Be sure to smile
At work or play,
And brush your teeth
Three times a day.

Then, sure as fate,
You'll grow to be
As happy as a
Child can be

BOOK REVIEWS

HEALTH AND SUCCESS, and HEALTH AND GOOD CITIZENSHIP. The first adapted to the intermediate, and the second to the upper elementary grades. By J. Mace Andress, Ph.D., and W. A. Evans, M.D. Ginn and Company, Boston. 1925.

THE reason so many school textbooks have so poorly served the children is that they have been written by school officials and university professors who are out of direct touch with children.

Now come two books written by a university lecturer and a newspaper columnist, albeit a learned doctor, to compete in a well filled field. They will be cordially welcomed by every earnest and clear-minded teacher, for they combine the ease and attractiveness of the best newspaper style with the subtle art of the pedagogue. They make an exceedingly judicious selection of topics for discussion, and after the discussion they provoke the activity of the child by suggestions of interesting things to do, by review and thought questions, and by the statement of health habits.

There is, as there should be in books designed to stimulate action and guide conduct, a great deal of repetition of the important facts in their varied applications. The use of wholesome foods, the value of fresh air and sunlight, sleep, play, a cheerful spirit, and care for the public good are impressed on the reader and made to appear desirable things in the child's life.

The books are not without shortcomings. One of the most difficult things in a teacher's work is to ask successful questions, questions which clearly indicate the point desired and require the pupil to depend on his own knowledge and reasoning for the answer. "Why" is a tricky word. A boy has some notion of why he snitches an apple from the fruit stand or why he wears soft shoes on a tennis court, but when he is asked, "Why does a tooth ache?"—there isn't any why. "Why does a cow lie quietly under a tree after grazing?" Probably she is tired or wants to get out of the sun. Not many pupils would guess the answer desired is, "To chew her cud." These are only samples. There are too many such.

A purist in language would be offended by a phrase, too common in other places than these books, heat and energy, as if heat were not a form of energy. Misleading expressions are sometimes used in the attempt to make a point simple. The synovial fluid is called "oily" when its function could as well be expressed by the words slimy and slippery. The veins are said to be blue and the blood in them "blue black." Taken in connection with the accompanying bright blue illustration this is inexcusably misleading. The illustration could more economically be printed in only one tint, bright red, with the venous part overlaid with black shading to give a more exact difference between the arterial and venous blood.

Perhaps yellow fever is not caused by Leptospira and perhaps measles is caused by bacilli, but when the statement has no practical value would it not be better to omit making any statement on points generally questioned? The illustration given of healthful tenements is disappointing, so wretchedly plain and unattractive are they. There are economical homes for working people that are at the same time beautiful.

Notwithstanding these strictures, the books rank in the forefront of practical health books for children. Teachers who use them will be grateful to Dr. Evans for turning his long newspaper training and wide scholarship into such a helpful channel, and to Dr. Andress for devoting his experience as a lecturer and writer on health education to this elementary field. R. E. B.

THE CONQUEST OF CANCER. By H. W. S. Wright, M.S., F.R.C.S. First edition. Cloth. Price, $3. Pp. 80. With an introduction by Crookshank. E. P. Dutton & Co., New York. 1925.

THIS is a small book on a big subject. It is very clearly and sanely written in good English. The introduction comprises twenty-eight of the eighty-two pages. Crookshank writes from London; Wright from the Surgical Department of the Shang-Tung Christian University. Both seem to have gleaned their facts in regard to cancer from reading the literature. Both present the views accepted by the majority of surgical pathologists, statisticians, research workers, surgeons and biologists—that the cure of cancer is becoming a problem of education, that operations cannot be made more extensive, but patients with the warnings of things that may be, or are, cancer can be induced by education to receive the benefits of a now well-established surgical procedure very much sooner after the first symptoms.

Dr. Wright contrasts the recorded evidence of the literature between the results of late and early intervention in cancer. The case of early intervention is now settled. It remains with the medical profession to get the facts properly before the public. No references to the literature are given, and properly so.

This is a book for the lay mind, and one of the best, if not the best, for first reading. A larger book written by Dr. Charles P. Childe, former president of the British Medical Association, published first by Methuen & Co., London, and more recently by Dutton & Co. in New York, is dedicated to the public, but should be read after Wright's primer.

Neither Childe nor Wright accept the view as formulated by Barker in his recent book published by Stokes, that the cause of cancer is largely associated with meat diet, the absence of proper vitamins, chronic constipation and intestinal stasis. This view is also rejected by the great majority of authorities who have been investigating cancer for more than twenty-five years, in spite of its enthusiastic introduction by Arbuthnot K. Lane, a London surgeon.

Medical and lay men interested in the study of cancer should write the American Society for the Control of Cancer, 370 Seventh Avenue, New York, for their three little books, about the size of Wright's. The most recent, "The Objects, Methods and Results of the Work of the Society"; the others, "Essential Facts about Cancer," for the medical profession, and "What Every One Should Know About Cancer," for the public.

The essential feature of all these publications is that in order to reduce the number of deaths from cancer, the public must receive and understand a certain amount of correct information. At the present time there seems no other visible solution of the problem of the conquest of cancer. This will not conquer cancer, but it will largely control it. J. C. B.

HEALTH NEWS AND VIEWS

NEW MEXICO MOTHERS NEED EDUCATION IN BABY CARE

Nearly one eighth of all the babies born in New Mexico die before reaching their first birthday, says a recent statistical bulletin of the health department of New Mexico. The infant mortality rate in New York City, with its heat, dust, crowded quarters and racial varieties is only one half that of New Mexico.

Of the thirty-two states for which figures are available, the lowest infant death rate is found in Oregon, with a rate of 51 deaths for every 1,000 births; then comes New York, with a rate of 68. The highest is South Carolina, with a rate of 122. New Mexico has a higher score than any of these states, with a rate of 132; and this does not tell the whole story, for many counties in New Mexico are deficient in the registration of births and deaths.

LOS ANGELES WANTS CLEAN GLASSWARE

Proprietors of soda fountains and soft drink stands in Los Angeles are required to sterilize glassware after use. Failure to clean drinking utensils properly has caused many arrests and fines among proprietors of these establishments. More than fifty of these individuals were arrested in a week and twenty-eight of them, during a single day, were fined for failure to observe the law. A number of arrests of fruit stand owners who fail to protect their wares from flies and dirt have also been made. Police court judges have imposed fines of $25 upon conviction of such violations.

MORE SUNLIGHT FOR CHICKS AND CHILDREN

The value of sunshine to the health of children is suggested in some experiments on baby chicks carried on by Professor E. B. Hart of the Wisconsin Agricultural Experiment Station. He placed two healthy chicks of the same age and variety on exactly the same diet. One chick was exposed to direct sunlight for one half hour daily while the other was kept out of the direct sunlight entirely. At the end of four weeks the sunshine chick gained 148 per cent. in weight and grew in proportion, while the other gained only 23 per cent. and looked starved. Thirty minutes' exposure to sunlight each day made the one chick grow six times as fast as the other.

In another experiment, two groups of healthy chicks of the same stock and age were put on a diet calculated to produce rickets. One group of chicks was exposed to sunlight for ten minutes each day. The other group was exposed to light during the entire day. At the end of six weeks the group that spent the full day in the sunshine had all the appearance of normal, healthy fowls and averaged 50 per cent. more weight than the other group.

Chicks confined to sunlight that came through window glass fared no better than those excluded from sunshine altogether, while others of the same age and stock developed normally on the same ration plus exposure to direct sunlight. There are some sun rays which are very important to health and which do not penetrate glass.

FOOD OFFICIALS STUDY WORK OF AMERICAN INSTITUTE OF BAKING

When Dr. H. W. Wiley stood before the doors of the American Institute of Baking for this picture he asked for a stein and a loaf of rye bread with which to recall the days of long ago when he aided in making the standards of purity of beer in the same building now devoted to the science of baking. In his other hand he held a twin loaf of bakers bread, made with milk and meeting nutritional demands.

BLOOD DONOR HONORED

A London printer was recently awarded the Order of the British Empire and a life governorship of the London Hospital for helping save the life of seventy patients by giving his blood for transfusion.

An assocation of donors of blood has been formed by the London Scouts. It is known as The Rovers. On receipt of instructions to report, a Rover will go to the hospital in need of his service, his blood having been previously tested.

DETROIT HAS MOTHER'S MILK BUREAU

Detroit has a curious enterprise—a bureau of wet nurses. They furnish human milk for babies whose mothers cannot nurse them. Last year this bureau furnished about 13,000 quarts of human milk for this use. The price to patrons is 39 cents an ounce. The wet nurses who produce the milk are paid 10 cents an ounce and carfare.

The bureau keeps a sufficient number of producing mothers on its payroll to supply more than enough to cover its needs for private cases. This excess each twenty four hours is distributed free of charge to hospitals caring for sick and premature infants.

International

EVOLUTION OF NURSES' GARB

At the fiftieth anniversary of the City Hospital School of Nursing, Welfare Island, N. Y., nurses showed dolls wearing the uniform of nurses from 1875 to the present year. From left to right the dolls wear the uniforms of 1875, 1885, 1895, 1905, 1915 and 1925.

SPANISH BOYS BELIEVE IN CAMP LIFE

Camps with tents virtually dot the hills of sunny Spain. These Spanish boy scouts have pitched their tent, on which is painted an American Indian, amid the beautiful trees in the mountains of Guadrama.

LARGEST FAMILY

The Arnold family numbers eighteen. The oldest of the sixteen children is 29 years and the youngest, 10 months. They look vigorous enough to rank as one of the most healthy as well.

Two photos by Pacific & Atlantic

Pacific & Atlantic

JAPANESE MESSENGERS OF MERCY

These little Tokyo maidens believe in demonstrating kindness to animals. They furnish cool drinks to thirsty horses during the hot weather.

TOURING TURKISH FASHION

This family of Turkish traveling performers journey in simple fashion over Asia Minor, entertaining crowds at each stopping place. Father and the baby ride on the donkey; mother and the trained bear trudge along.

Underwood & Underwood

Pacific & Atlantic

OPEN AIR HIGH SCHOOL

School opens at Crouch End High School, London, England, and these barefoot girls are having lessons in the open air.

CHILD'S PLACE IS IN THE HOME, SAY MENTAL EXPERTS

The benevolent philanthropist who thinks of starting up a new orphan asylum to dispose of his surplus millions is now urged to consider the line, "Be it ever so humble, there's no place like home."

The National Committee for Mental Hygiene reports that while physical conditions in orphanages have improved greatly in recent years, the mental status of the orphan is little better than it was fifty years ago. Consequently, it recommends leaving the child in its own home or placing it in a foster home, however humble.

Every child, says the committee, needs to feel that it "belongs," and to have the affectionate interest of some individual, because such interest does a great deal to shape the child's attitude toward the world. Then, it needs to be trained in healthy habits of conduct and mind, which is a highly individualized process, where literally one child's meat proves to be another's poison. And third, it is well-nigh impossible to prevent a child in an institution from becoming handicapped by an inferiority complex and thus impairing its success in life.

"There seems little if any real need for orphanages," says the committee. "In 1923, in New York City it cost taxpayers only a little over $15 a month for each child kept in its home by a mother's pension system or placed in a foster home. At the same time, it cost $28.40 for each child in an institution."

Those institutions that are now overrunning with babies cannot be carelessly scrapped, but the committee believes that since asylums are both expensive and undesirable they should gradually be reserved for the child who, by reason of appearance, mentality, or conduct, nobody wants.

WHEN THE BABY IS NEGLECTED

The nine months before a baby is born is the most neglected period of his existence, says Dr. Dorothy Reed Mendenhall in a recent Children's Bureau publication on building babies. The expectant mother is likely to leave her diet largely to chance or the whims of appetite, although she may be most careful of her food during the nursing period. Wrong feeding may be disastrous. It is not safe for the mother merely to eat what she is accustomed to or plenty of good, nourishing food. The woman who is to become a mother as well as the nursing mother should find out from a physician how much of certain essential foods must be eaten daily.

The food needs during pregnancy and the nursing period differ from those of any other time. The mother's food must maintain and repair her body and furnish fuel for warmth and work, and also provide for the growth of her baby and for maintaining his body temperature, muscular activities, and body fat.

Simple, easily digested, and, in general, laxative foods should be chosen. Four or five small meals may be better than three large ones. Eating too much, hurriedly, or irregularly is harmful. A hygienic, happy life, with plenty of outdoor sunshine, enables the mother to use her food efficiently.

When the mother has been properly fed, adds Dr. Mendenhall, the baby has a better chance of being born a fine, healthy child, vigorous, and resistant to disease. The mother will be able to furnish milk for him and will have strength to give him the right kind of loving care.

FREE PLAY IN CHICAGO PARKS

Keep off the grass signs are not approved by West Chicago Park Commissioners, who are planning to give children more chances for games and play in the parks.

TREATING ORPHANS FOR TRACHOMA

These orphans are charges of the Near East Relief. They are being treated for trachoma, a contagious eye disease which is common among new arrivals in the relief district. A special building in Alexandropol, the Soviet of Armenia, is set aside as a trachoma hospital.

HEALTH PROGRAM FOR SMALL SCHOOLS

The smallest school can cooperate to carry out the following program suggested by the Oklahoma State Department of Health. Three objectives are to be kept in mind. First, the elimination of disease; second, the normal growth and development of the child; third, the correction of physical defects that may now or later interfere with the health or efficiency of the child.

1. Daily inspection of all pupils for symptoms of communicable disease; exclusion of all pupils with such symptoms.
2. Constant attention to the practice of health habits.
3. Special attention to application of good food habits, and arrangements for milk lunches at school, with hot lunches, especially during the cold months.
4. Health records kept in the school; records of weights and measures recorded at least once a year.
5. Arrangements with local physicians and dentists for annual examination of pupils.
6. Arrangements for rest periods at school each morning and afternoon for all children who are malnourished, over-tired, nervous, or who have serious physical defects indicating need of special rest periods.
7. Special attention to the sanitary condition of all toilets and wash rooms.

THREE C'S FOR THE CARE OF FOOD

Children go to school to learn the three R's. Mothers and home keepers should learn the three C's in connection with food. This is a message of the Connecticut State Department of Health.

Unless certain precautions are taken, food may become a source of danger to health. People have an aversion to visible dirt, and presence of it on or near food is sufficient reason for distaste for that food. They often forget that invisible dirt may be even more dangerous. To make food safe for consumption the three "C" rules should be adopted—Clean, Cold and Covered. These are the essence of protective measures.

Trade in a shop where food is clean and is handled in a clean manner.

Keep the food in a cold place (of even temperature).

Keep food covered. This will prevent contamination from outside sources and from flies.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnosis in individual cases will not be attempted nor treatment prescribed. Answers to questions relating to beauty will be found in the "Healthful Beauty" department of this magazine.

Antitoxins

To the Editor:—Is it wise to give toxin-antitoxin to children who are in daily contact with a diphtheria patient? How long does such treatment protect a patient? How long is it after the last dose is given before it affords immunity? In the case mentioned, the children were given 1,000 units or 500 units of antitoxin about three weeks before toxin-antitoxin treatment was started. Can scarlet fever be transmitted to a child from the clothing of another child who had worn the same clothing just before his death of scarlet fever about ten years previous? The clothing was thoroughly aired and stored in an attic for the ten years. How long does typhoid serum protect from typhoid and how long after last injection is the immunity produced?

C. E. C., Colorado.

Answer.—Toxin-antitoxin is not used to protect susceptible children in daily contact with a diphtheria patient. Antitoxin only is used for this purpose. It requires from three to six months after the last injection for the active immunity produced by toxin-antitoxin to develop. The immunity response should be tested by the Schick reaction at this time, and if the patient is still susceptible, additional injections should be given until there is a negative reaction. The immunity from toxin-antitoxin lasts for six to ten years and possibly for a lifetime.

In cases in which prophylactic doses of antitoxin have been given, it is best to wait for six or eight weeks before beginning the toxin-antitoxin treatment. Apparently the passive immunity from antitoxin interferes in some way with the development of the active immunity of toxin-antitoxin when the latter is given too soon.

Recent investigations have shown that an organism known as the streptococcus causes scarlet fever. It is unlikely that this organism would remain alive in clothing for ten years. While there are apparently authentic reports of scarlet fever being transmitted by clothing or books over a long period of time, it is more probable that the disease is spread by some person with unrecognized scarlet fever or by a carrier of the scarlet fever streptococcus.

It is generally assumed that typhoid vaccination protects for two or three years. The immunity develops very soon after the last injection, probably within a few days.

Pendulous Breasts

To the Editor:—Is there any way in which pendulous breasts may be made firm and brought back into a normal position? Is there any muscular tissue in the breast? Do you know of any brassières that do not push the breast down against the ribs when it is of the pendant type?

B. E., California.

Answer.—Pendulous breasts may be due to some form of congenital enlargement, physiological enlargement as with pregnancy and lactation, or some diseased condition. If the breast that becomes pendulous during pregnancy is carefully supported, it will usually return to a fairly normal condition after the baby is weaned. Congenital enlargement is relatively rare and usually associated with precocious development. Enlargement due to a diseased condition may be of various types but can only be treated by surgical removal of part or all of the breast.

No muscle tissue supports the breast. Some smooth muscle fibers extend from the base to the apex of the nipple and there is a bundle of circular fibers around the base. The erection of the nipple is possible because of this muscle tissue.

The styles of today have resulted in brassières that tend to push the breast downward and compress it against the upper abdomen rather than the chest wall. This tendency to press the breast down will in time stretch the skin and tissue underneath and make the breast more pendulous.

A special brassière must be made for breasts that require support. It should be loose above and comfortably tight around the chest under the breasts. The shoulder straps should be patterned after a man's suspenders, crossing behind and with a strap attaching at two places in front.

Aortitis

To the Editor:—This is a request for general, not specific, advice. I am 61 years old and have aortitis (inflammation of the aorta—the large bloodvessel coming from the heart). What are the probabilities in such case? Is there danger or likelihood of sudden death? The fundamental cause of the disease has been reduced to a minimum. Please give me any general advice as to rest, diet and exercise in such a case as may be necessary or any other general information available.

T. A. McC., Iowa.

Answer.—Most men at the age of 60 have changes from the normal condition in the aorta and the arteries of the heart. There is thus the possibility of angina pectoris, heart failure, brain hemorrhage or even sudden death from the latter or from the closing up of one of the arteries of the heart. The probabilities in any case will necessarily depend on the cause and the extent of the damage. It is thus possible for a man who has an aortitis at 60 to live to a ripe old age and die from some other condition.

Men after the age of 60 should on general principles exercise more precautions in regard to their habits of living. This applies especially to diet, work, exercise and recreation and is more particularly true with those who have demonstrable changes in the arteries, heart and kidneys.

The food should be simple in character and taken in moderate amounts. Sufficient vegetables and fruit should be included in the diet to promote a daily bowel movement. A moderate helping of meat may be taken once daily. In general, fried, fat, greasy and highly seasoned foods and rich pastries are difficult to digest and may thus produce gastro-intestinal disturbances. In this connection, it may be added that excessive use of tobacco and alcoholics should be avoided.

Work, physical or mental, when done in moderation, promotes health. When work is done continually beyond the point of fatigue and brings on shortness of

breath, there is great possibility of permanent damage being done. This is the time in life when more recreation should be taken. The form of recreation adopted may vary and be equally effective. In any event, the recreation should take the individual away from usual routine duties and, if the occupation is sedentary, should supply some mild form of physical exercise.

Perspiring Feet

To the Editor:—The man to whom I am engaged is sorely afflicted with sweating, bad smelling feet. They perspire both summer and winter till the feet are galled between the toes. He is a healthy man, never sick, and is an oyster packer in winter and wears gum boots. In summer he buys produce and walks a lot. He bathes his feet every day and changes his socks twice a day. He is a tobacco chewer, but smokes only three cigars a day. He chews the strongest kind of tobacco all the time except when he eats and sleeps; he drinks only water, but a great deal of that. I want you to tell me what he should do for this trouble.

S. V., Alabama.

Answer.—Sweating and bad-smelling feet are not at all uncommon.

It may be helped by wearing shoes, slippers, or sandals that will allow as much air as possible to have access to the feet and so evaporate the perspiration. Rubber boots or shoes should never be worn unless one is working in water.

Socks should be changed twice a day, should be thoroughly boiled when laundered and, of course, put on dry.

Once or twice a day the feet should be thoroughly washed with soap and water and then allowed to soak for five minutes in a 2 to 8 per cent. solution of formaldehyd, which a druggist can prepare. After this, the feet should be carefully dried and then dusted with boric acid powder.

If this does not improve the trouble sufficiently a physician can tell you of several other preparations that have proved useful in some cases. These are to be prescribed by a doctor and used under his direction.

Excessive drinking of water increases the amount of sweat. From two to three pints of water a day is sufficient for any person, unless he is working in a hot place.

Hives—Powder

To the Editor:—Could milk drinking be the cause of the sudden appearance of swellings on the neck like mosquito bites? I am not familiar with the appearance of hives, but have been told that these swellings have the same appearance. I have tried to observe any idiosyncrasy for certain foods, and I can relate such a reaction only to drinking milk. Has Harriett Hubbard Ayer's powder ever been analyzed? Is this brand of powder safe to use constantly?

L. G. P., Illinois.

Answer.—Hives is characterized by the appearance on the skin of white or pinkish elevations or ridges of varying size and distribution. The most common characteristic is the rapidity with which these lesions appear and disappear. They are most frequently due to the taking of some food material.

Many persons cannot eat shell fish because of this reaction, others get the same result from strawberries or buckwheat cakes. When one has discovered that some particular food is followed by hives he should avoid that food. Seldom does milk cause this manifestation. A physician will make a series of skin tests to determine the exact substance responsible.

The Harriett Hubbard Ayer's Powder has never been analyzed by the chemical laboratory of the American Medical Association. Certain other preparations of the same concern have been examined by various agencies. Some years ago, for example, the Massachusetts state board of health analyzed the "Moth and Freckle Lotion," the "Recamier Balm" and the "Recamier Cream" and reported all of these to contain a caustic poison that causes inflammation of the skin in some cases. In 1924 the chemical laboratory of the American Medical Association found ammoniated mercury in the face cream.

Another of these preparations, Ayer's Depilatory, was found by the chemists of the Indiana state board of health to be two-thirds starch and one-third barium sulphid.

Yeast

To the Editor:—A friend of mine has taken yeast for three months. Will you please tell me if yeast taken two or three times a day is a safe treatment for any one to take for constipation, or if a physician should prescribe it? Will you kindly explain the chemical or medical action of yeast on the system?

H. H. B., Pennsylvania.

Answer.—Yeast acts as a laxative in many persons but it causes, not infrequently, an unpleasant distention of the bowels. Yeast contains a considerable amount of one of the vitamins and, in cases in which these are not to be had in any other way, may serve a useful purpose.

For a person whose diet contains vegetables, fruits and the dairy products, an ample supply of all of the vitamins is obtained in the food, and yeast is wholly unnecessary.

Scarlet Fever

To the Editor:—What are the proper precautions during and after scarlet fever? What should be done in school with reference to books and papers? Are there carriers of scarlet fever germs as of typhoid fever? This question was suggested by what seemed like an example of such a case.

E. M. J., Pennsylvania.

Answer.—Among the contagious diseases scarlet fever is one of the best examples of transmission of disease by contact.

A scarlet fever patient should be cared for in the same manner as a surgical case, except the aseptic and antiseptic procedures must be carried out in the reverse order. Anything that comes in contact with the contagious disease patient must be disinfected before it is brought in contact with anything else. In other words, one must confine the contagion to the patient.

Physician, nurse, or attendant should always scrub his hands with soap and running water immediately after touching the patient or articles that have been contaminated by the patient. Disinfectants, other than soap and water, are not necessary for this purpose.

Books, papers or other articles, particularly pencils, that have been handled by a scarlet fever patient in a school are best destroyed, if of no great value. If of exceptional value, books may be placed on end, open, and exposed to sunlight and air for at least eight hours. Ordinarily, as often pointed out, the health officer should seek persons not things in tracing the spread of contagious diseases.

There are undoubtedly scarlet fever carriers. Convalescent scarlet fever patients that continue to have a discharging nose, ear or gland several months after the onset of the disease are frequently in the carrier class. Other persons suffering from sore throats may have scarlet fever organisms in their throats even though they have no scarlet fever rash. There is sometimes no difference between what is diagnosed as

streptococcus sore throat and scarlet fever, except the absence of the rash.

"Properly any child seeking readmission to school following an attack of scarlet fever should first have a culture made from his throat in order to determine whether the specific bacteria causing the disease is present. Especially every child who has had a discharging ear should be regarded with suspicion.

Scarlet fever has been transmitted in this manner 113 days after the onset, says the director of the contagious disease division of a large city. Ultimately he believes scarlet fever quarantine will be determined much in the same manner as diphtheria. Four or five weeks' quarantine is unnecessarily long for some mild cases, whereas double such periods is not nearly sufficient for others. If two negatives cultures from the nose and throat, also from the ear if there is any discharge, could be obtained by the end of the third week of the disease, quarantine restrictions might reasonably be lifted. Quarantine, however, should continue indefinitely until negative cultures result. Peeling is no longer regarded as a factor in the spread of scarlet fever.

Artificial "Change of Life"

To the Editor:—Can a woman of 44 who has had both ovaries removed get over a nervous condition and, if so, how long does it usually take to complete artificial "change of life." I am writing mainly to find out about my eyes, which trouble me so much. During this period of transition, is it possible to get glasses to fit? I had my eyes tested and changed from 75 plus to 25 plus, and yet my right eye aches and occasionally it seems as if a gnat were before it. Had I better see an oculist or wait a year or so? It is a year since my operation. I am peculiarly situated and unhappy, so that adds to the physical state. F. M., Wisconsin.

Answer.—The severity of "change of life" depends on many different conditions. At that time the function of the ovaries ends and a new balance between the other organs of internal secretion must be accomplished. Several years of nervousness is the rule. Dissatisfaction with surroundings, financial difficulties, and all forms of nervous tension tend to aggravate the hot flashes and other disturbances. "Change of life" after an operation comes on rather severely while the woman is still weak, but otherwise it will probably be about the same as she would have had without the operation.

Nervousness and physical weakness may aggravate an existing eyestrain. Careful examination by a physician who gives his attention exclusively to eye conditions will probably reveal the cause of your disturbed vision.

Buffalo Bugs

To the Editor:—For the past two or three years we have had considerable trouble with what we call Buffalo bugs and seem unable to exterminate them, having tried about every remedy that was suggested. These little pests have already done considerable damage to the wearing apparel of the family, and we most assuredly would appreciate information as to how we may proceed to exterminate them. J. W. C., Iowa.

Answer.—Carpet beetles, often called buffalo moths or buffalo bugs, are beetles entirely different in appearance, structure and in the frequency and abundance of reproduction from the true clothes moths. They are, however, associated with the latter in their destructive work on all fabrics of animal origin.

In cases in which infestation by these pests is general throughout a house, the quickest and best method to get rid of them is by hydrocyanic acid gas fumigation. This should be practiced by a professional fumigator or one familiar with its use. If properly used, this procedure is simple and is the best method of attacking or destroying pests that have become generally established around a home. If this gas cannot be employed, then sulphur fumes may be used (See HYGEIA, August, 1925, Page 459).

If these pests are found only in trunks, chests, closets or other small compartments that can be closed tightly and even sealed from the outside with gummed paper or paper and adhesive tape, then a good grade of flake naphthalene (so called flake camphor), will be found effective. For each 10 cubic feet of space (obtained by multiplying length by width by height) one should use one pound of powdered naphthalene. He should keep the drawers, chests or closets tightly closed and, if necessary, seal them from the outside.

If the furniture and carpets are affected, fumigation is to be practiced. The biweekly application of kerosene or kerosene cresol solution (see HYGEIA, September, 1925) to the individual hiding places in the furniture and beneath the carpets will prove effective only if this is used freely and persistently. This makes such treatment a tedious operation and generally less effective, because some infested areas are generally overlooked.

After these pests are eliminated, control measures should be practiced to secure permanent protection. One should see that the windows and doors over the entire house (including cellar windows) are screened tightly. This will keep almost all of the pests on the outside.

Cracks and openings beneath base boards and in the flooring should be filled with a suitable filler. Cracks and openings that cannot be filled should be treated with kerosene at frequent intervals.

Carpets should not be tacked down. Rugs and carpets should be removed frequently and beaten.

Infested clothing should be laundered or dry cleaned.

Carpets, upholstered furniture and other equipment may be mothproofed by the housewife. This will not affect the material but will render it unfit as a food by moths and carpet beetles.

Placenta Praevia

To the Editor:—I would like to know what is the cause of placenta praevia? If a woman has had it once and has lost the child at four months, would it be likely to occur again? M. L. S., New Jersey.

Answer.—In placenta praevia the after birth lies over the mouth of the womb. As the womb enlarges part of the placenta is torn loose from its attachment and this results in bleeding, sometimes so severe as to be fatal.

Little is known concerning the actual cause.

Placenta praevia can occur more than once, especially if the conditions that caused it the first time are still present and active. It is, however, unusual.

Thumb-Sucking Mitts—Nail Biting

To the Editor:—1. Will you please tell me where I can secure the aluminum mitts for thumb-sucking babies? 2. Kindly give me several suggestions for treatment of an adult who bites his fingernails and has done so all his life? C. E. C., Colorado.

Answer.—1. Thumb-sucking mitts may be obtained at any store that deals especially in infants' goods. A variation of the aluminum mitt is the thumb-ring, which is advertised in HYGEIA. It is necessary when ordering the thumb-ring to give the measurement of the thumb at the joint.

2. Nail biting may be a sign of a neuropathic constitution, and it may be necessary to consult a physician for a general examination.

If it is purely habit and the adult wishes to overcome it, the same means may be employed as for children. The finger may be painted with a solution of quinin or else may be taped with adhesive plaster. Either of the procedures will change the act from an unconscious one to a conscious one and the rest depends on the person concerned.

Intestinal Disturbances

To the Editor:—I have been reading HYGEIA constantly since its inception. I am chiefly interested at present in articles on constipation, from which I am a sufferer. Two years ago I had a fistula operation and since then have taken enemas or internal baths to free the intestines. I am sure I have chronic appendicitis. Could you give me the names and address of some good surgeons who specialize in intestinal diseases and who can give me a real physical examination. Can chronic appendicitis be cured without surgery, by exercise, diet or fasting. Are rectal dilators of any benefit in constipation? In your December, 1924, issue of HYGEIA, Dr. Walter C. Alvarez states that enemas are not dangerous. Some doctors say they are. I would like your opinion.

C. H. K., Illinois.

Answer.—It is not desirable to use enemas as a regular habit. Used at times to meet certain conditions, they are very helpful.

We cannot give the names of individual physicians who specialize in any particular branch of the profession. Your family doctor is the one to recommend you to a physician of this type.

One with appendicitis may be benefited by special diet and exercise, but if one is certain of the diagnois and acute attacks recur frequently, removal is the safest and most effective remedy.

We have rarely known dilatations of the rectum to be of any value in constipation, except in cases in which the constipation is obviously due, in whole or in part, to trouble about the anus, such as fissure, fistula or hemorrhage. In such a case the dilatation of the anus is a part of the treatment to remedy the local condition.

Psoriasis

To the Editor:—Has any progress been made in the knowledge of the origin and cause of the skin disease, psoriasis. Skin specialists in New York have stated that medical science has progressed little in the study of this disease. They have recommended certain salves for the purpose of destroying the scales but the x-ray seems to have been the most efficient. If there is any information in your records as to the origin of this disease or any more improved method for the treatment, will you be good enough to send this to the writer by return mail. Is it possible that this disease comes from tainted water in corroded pipes, or can a highly nervous and excited condition causing difficulty in the kidney and liver tracts create this condition of the skin? The patient is a woman of approximately 60 years.

J. L. M., New York.

Answer.—The cause of psoriasis is unknown. It is not contagious and in all probability not infectious. It may occur in several members of a given family but it is not, strictly speaking, hereditary. The occurrence of the disorder in more than one member of a family may be coincidental as from 3 to 5 per cent. of the patients in skin clinics have psoriasis. The patients are usually well and strong and it is sometimes called the "healthy man's disease."

Tainted water in corroded pipes is not the cause. There is nothing to indicate that the kidney or liver is at fault. The blood pressure in a large percentage of such patients is abnormally low. The disease is usually worse in winter than in summer.

The patient should select a good physician who has had a large experience with diseases of the skin and have himself kept under constant observation. The treatment should be changed as conditions require. A strictly vegetarian diet is of great value. X-ray should be used with great care because it may damage the skin if a given area is repeatedly exposed.

Ammonia Diapers

To the Editor:—My baby is eleven months old. Her diapers at times have a strong ammonia odor. Can you tell me the cause and indicate a remedy? I wash the diapers in naphtha soap.

A. F. L., Illinois.

Answer.—The strong odor of ammonia in babies' clothes—especially in the diaper in the morning—is caused by a certain germ in the garments. This germ decomposes the urea of the urine at body temperature and liberates ammonia. The sharp ammonia sooner or later irritates the sensitive skin of the region with which it comes in contact and causes more or less soreness. Change in diet has little, if any, effect.

1. Boil all clothing and bedding that has the strong odor daily for 15 minutes in a covered pail.
2. Wash the body with soap several times a day, as the germ also lives on the skin.
3. Put the cleaned clothing and bedding (including the mattress) in the bright sunlight for at least an hour at noon.
4. Avoid constant use of rubber diapers.
5. Change diaper as soon as wet.
6. Leave the diaper open (unpinned) for two hours two or three times a day.
7. Apply zinc oxid ointment to the irritated parts.
8. On warm days expose the body to the sunlight for increasing periods of time (15 to 30 minutes).

By following these rules for at least ten days the condition will usually be corrected.

Goiter

To the Editor:—Will you kindly send me answers to the following questions regarding exophthalmic goiter. 1. What are the definite symptoms of this disease? 2. Is there any cure for it and, if so, what is it? 3. Is the disease contagious, as for instance, may a wife be infected in any way by a husband? 4. Can offspring inherit the disease or a tendency to it? 5. Are any of the thyroid derangements infectious or heritable? 6. Are bulging eyeballs a symptom of any other disease? 7. Is the presence of the two symptoms, bulging eyeballs and rapid heart action, sufficient to diagnose a condition as exophthalmic goiter?

E. B., California.

Answer.—1. Weakness, rapid heart action, loss of weight, tremor, nervousness, and finally prominence of the eyeballs; nausea, vomiting, and diarrhea are symptoms of exophthalmic goiter. These symptoms run a course sometimes growing better and sometimes worse.

2. The cure is removal of part of the thyroid gland following the control of the symptoms by the proper use of iodin.

3. The disease is not contagious.

4. There seems to be a tendency for offspring to inherit disorder of the thyroid from a mother having thyroid intoxication.

5. Thyroid derangements are often influenced by infections but are not in themselves infectious. Hyperthyroidism in a mother predisposes to hyperthyroidism in offspring.

6. The bulging of eyeballs in hyperthyroidism may be somewhat simulated by chronic inflammation of the kidney, or by tumors in the orbit (the bony socket which contains the eye).

7. Tachycardia (rapid beating of the heart) and prominent eyeballs, while suggestive of exophthalmic goiter, are not sufficient for diagnosis. Careful examination would undoubtedly reveal many other signs and symptoms if the disease is present.

Pain in Sciatic Nerve

To the Editor:—I would like to have some authentic information on pain in the sciatic nerve. What is the cause? Can it be cured and how? I have been troubled with it for eight months. I find it distressing and do not like the idea of letting it continue. What serious results might come from it? My general health seems good. The pain is worse toward evening. I hardly notice it during the day, but often at night I can not sit comfortably. I am not bothered when standing or lying down. The pain extends from the back of my hip down the left leg and the leg feels tense.

R. C., Michigan.

Answer.—Sciatica is an inflammation of the great nerve that runs down from the trunk on the back of the thigh to supply the muscles of the leg. It is sometimes confused with rheumatism of the muscles of the leg and persons therefore speak of sciatic rheumatism. The two conditions are quite different though they may have a similar cause, some source of infection in the body or some poison such as alcohol or lead, though often this cannot be located.

Sciatica or sciatic neuritis is a frequent and often persistent inflammation. It does not threaten life but causes pain more or less severe and is rebellious to treatment. Pain is usually aggravated by motion, pressure and cold and is more annoying when one is fatigued or weakened by another illness.

Naturally the first thing to do is, if possible, to locate the focus of infection, if such is responsible for the trouble. No doubt the physician has endeavored to locate such a source. Medicine also offers various remedies and measures for alleviating the pain.

Enemas

To the Editor:—Is there any merit in the use of large enemas or bowel flushes, also called internal baths. Some of my acquaintances, both men and women, use them and claim to derive benefit therefrom, but an elderly lady cautioned me against the use of the injections saying that a habit would be formed necessitating the continuous use of the devices. Is this correct? Is plain water or a soapy water best? Do you think the new style syringe that the patient sits on preferable to the ordinary fountain syringe? Is the long soft rubber flexible rectal or colon tube better than the short hard rubber or metal point for making large injections?

J. F. S., Kansas.

Answer.—Enemas are of value to meet certain conditions but not as a regular practice. If used frequently, there is a tendency to aggravate or even to bring about dilatation of the veins resulting in piles. It is true that if such injections are used continually they are likely to result in a habit.

As to the substance used, soapy water promotes passage of the contents probably better than plain water. The ordinary fountain syringe is as good as any and the short tube as good as the so-called colon tube for ordinary use, but for certain conditions the high colonic flushing is helpful. It is given by the nurse under the direction of the physician.

All enemas are more effective when the liquid passes some distance up into the bowel and when a considerable quantity of fluid is used. To bring about this result it is best for the patient to lie on the left side with the hips elevated, allowing the fluid to flow in slowly so as to introduce as large an amount as possible before the desire to expell it becomes uncontrollable. It should be retained for five or ten minutes and then expelled.

Superfluous Hair

To the Editor:—I am a young lady 30 years of age, in excellent health and normal weight. During the last six months there seems to be a rather heavy fuzz growing on my upper lip and the sides of my face, along the jaw bones. This is becoming annoying. Up to this time I never seemed to have any indication of hair on my face. I have just a medium head of hair and there is not a heavy growth of hair on my body. Have the periods anything to do with the growth of hair? Please state the probable causes and suggest a remedy, if there is any. Will ammonia and peroxid harm the face?

H. M. F., Wisconsin.

Answer.—Superfluous hair is of frequent occurrence. In some cases there may be disturbance of normal feminine functions and in rare cases a cessation of the flow.

The disorder is probably due to a disturbance of the delicate balance of the glands of internal secretion, but this disturbance can by no means always be determined, nor are we able to correct it even when demonstrated.

The only satisfactory method of treatment is the electric needle in the hands of a highly skilled and experienced operator. X-rays should never be used under any circumstances for removal of the hair. Peroxid of hydrogen and ammonia will do no harm, unless their use should happen to irritate the skin and give rise to a chronic inflammation of the skin.

Childbirth at 40

To the Editor:—I am a woman of 40 and would like to know if it is advisable to become a mother at this age? I have had only one child; she is about two and a half years old. I am anxious for another child. There has been no cessation of the periods. I am sure this question will be of importance to other women as some say that children born to women late in life are often feeble.

S. L., Illinois.

Answer.—A woman of 40 years who has good health should as a rule have no more trouble in childbirth than she would have at 30 or 35. There is no reason why children born near the end of the childbearing period should be feeble if the parents are in good health. On the other hand, children born to mothers who are physically exhausted from hard work and frequent childbirths or some diseased condition may be feeble.

Removal of Ovary

To the Editor:—Would a young woman who at the age of 20 had one ovary and one tube removed because of a mixed cyst and who bore a normal baby boy at 24 be apt to have a normal cessation of menstrual periods? Would she be apt to be nervous as a result of losing the ovary and tube?

G. J. V., Washington.

Answer.—So long as a woman has one healthy tube and ovary she should be able to bear children and continue the periods until the time of a normal "change of life." The removal of an ovarian tumor usually tends to lessen nervousness rather than cause it.

CURRENT HEALTH ITEMS

NAILS! NAILS! NAILS!

Nails cause more than 18,000 accidents a year in New York State alone, according to Robert B. Northrup, safety inspector of New York City, in the *Industrial Hygiene Bulletin* for September.

It can well be said, declares Mr. Northrup, that nails attack every part of the human body. Here are some of the quotations from accident reports: "Stepped on nail in floor," "nail in guard rail tore his scalp," "nail flew from box while loading truck, infected wound on nose," "while stuffing paper in barrel, punctured arm on a nail," "nail in bench tore leg," "rolling barrel, a nail caught tip of little finger on right hand pulling off part of the nail and tip of little finger," "while packing a case the cover, which was full of nails, fell down, the nails going into his hand."

He points out that it would be a splendid thing if industrial and mercantile establishments would institute a "nail elimination week" when all hands disposed of every dangerously located nail found during the course of their regular work.

Good housekeeping will eliminate many such accidents. All wood containing protruding nails should be gathered and stored in a safe place. Waste material or rubbish with nails therein should be burned and the resulting refuse safely disposed of.

WOMEN IN INDUSTRY

The economic status of women in the leading industries of Ohio has been investigated by the Women's Bureau (Women in Ohio Industries; a Study of Hours and Wages, United States Department of Labor, Women's Bureau, Washington, Government Printing Office, 1925). Many established ideas concerning women and girl workers are not borne out by this study in the state, which ranks fifth in the United States for the number of women in gainful employment.

The 1920 census records 409,970 women workers in Ohio, or one twentieth of the total number for this country. A fourth of these Ohio workers were employed in mills and factories; a fourth were engaged in domestic service, hotels, restaurants and laundries; a fourth were office employees, telegraph and telephone operators, and the remaining fourth were chiefly saleswomen or professional women. This survey included a study of women workers in stores, factories and laundries by interviews with employers and questionnaires filled out by the employees. Apparently 80 per cent. of the employees were native born whites. Of 17,915 who reported their ages, only 7.2 per cent. were minors (eighteen years and younger); more than half were twenty-five years of age or older; approximately 20 per cent. were in the thirty to forty age group; 16.9 per cent. were forty or older. Young women were employed more frequently in five-and-ten-cent stores, and in the manufacture of gloves, candy, shirts and overalls than in other industries. The schooling recorded by 13,981 adults showed that three fourths had gone no farther than the grammar grades. Those who had just finished the eighth grade received no higher wages than those who had left school after the sixth grade. Only 4.7 per cent. had completed high school. Of the 763 minors reporting on education, 21 per cent. had gone no farther than the fifth grade, and only 1.4 per cent. had completed the high school studies.

Marital status set down by 16,222 women and girls, revealed that 28.4 per cent. were married and an additional 17.2 per cent. were widowed, separated or divorced. This gives a total of 45.6 per cent. of women industrial workers who are or have been married, and helps to explain the living condition recorded for 16,249 employed women. Only 11.3 per cent. were living independently; 88.7 per cent. lived at home or with relatives. The members of the latter group must in many cases carry domestic responsibilities in addition to their gainful employment.

The Ohio laws limit the hours of work for women to fifty hours in a week and nine hours in any one day (with certain exceptions concerning Saturday). However, the legal maximum has not tended to become the actual maximum, as opponents of maximum hour laws predicted. In many establishments the working day was eight hours with forty-eight hours in the week, or even forty-four hours. More than three fourths of the women worked less than five hours on Saturdays. The two industries that have most generally adopted the forty-four hour week (the men's suit and coat and the women's suit and coat industries) are the two paying the highest wages to adult women. Although in general wages were found to increase with experience, it is notable that the highest earnings of women in Ohio industries were received by the twenty-five to thirty age group, and that after fifty years the average earnings showed a marked decline.

Since women industrial workers, contrary to established ideas, are chiefly adults, are American born, are to a considerable extent permanent members of industry, are nearly half of them married, widowed or divorced, it is a matter of considerable importance that their wages decline during early middle age. Women in industry must be better prepared, convinced of the importance and permanence of women's work and freed of the superficial point of view that women more readily than men can afford to work for low wages. The health and up-bringing of children and the care of homes as well as the welfare of the women themselves are involved in the economic status of women.

AMERICAN CHILDREN MORE INTELLIGENT THAN CHINESE

American children are more intelligent than Chinese children, declares Virginia T. Graham in the *Journal of Comparative Psychology*, in a report of intelligence test recently conducted in San Francisco public schools.

The Chinese children used as subjects for the test were all twelve years old and were pupils of the Oriental School of San Francisco, a public school used exclusively by the Chinese. The majority of the children tested were not Chinese but Cantonese. However, all of them came from Chinese speaking homes.

Tests were selected that would not be affected by the difference in language. These same test had been given previously to a group of American children and the results recorded.

In almost every test given, the American children proved superior to the Chinese children.